DECEMBER, 1983

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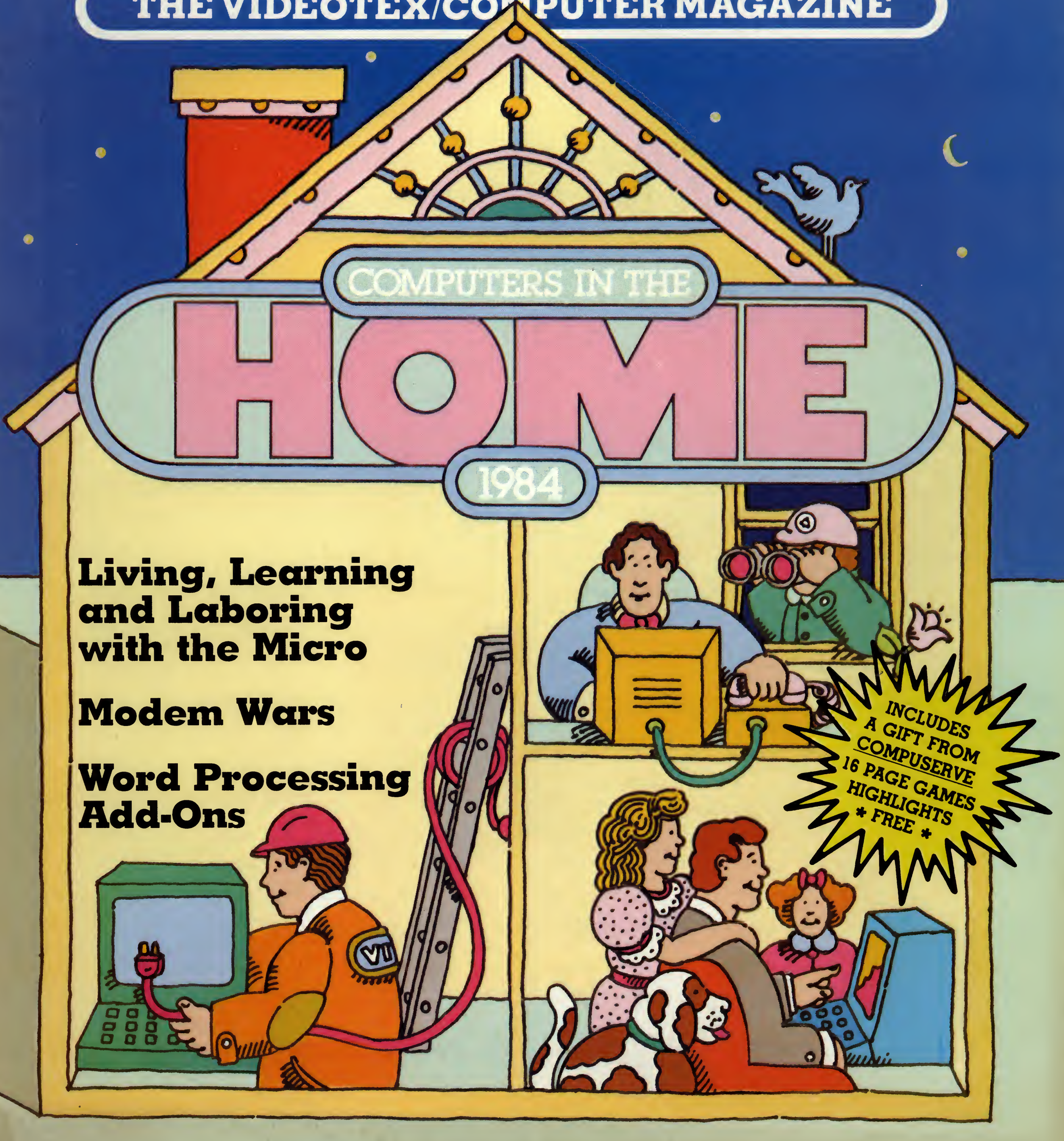
TODAY

THE VIDEOTEX/COMPUTER MAGAZINE



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Electronic Bounce Back

Electronic Bounce Back is TODAY magazine's answer to the traditional reader service card. When you want more information about an advertisement in TODAY, simply use your CompuServe ID and access Electronic Bounce Back.

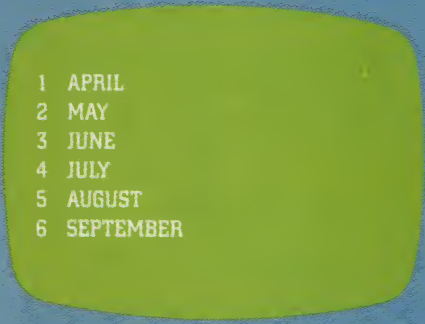
Instructions/Tips

Step 1
To enter the Electronic Bounce Back program, choose item 11, User Information, or GO EBB.

Step 2
After the introductory information, you will be prompted for your name and mailing address.

Step 3
A menu of available issues will then be displayed.

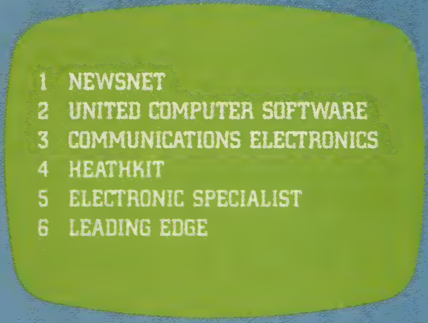
Example:



```
1  APRIL
2  MAY
3  JUNE
4  JULY
5  AUGUST
6  SEPTEMBER
```

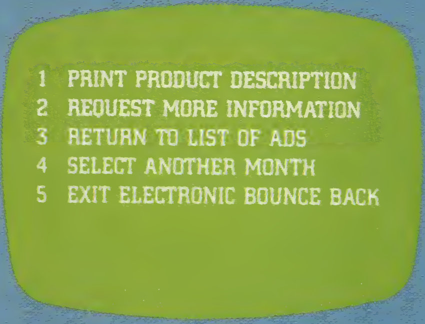
After entering the issue of your choice, a list of advertisers will appear.

Example:



```
1  NEWSNET
2  UNITED COMPUTER SOFTWARE
3  COMMUNICATIONS ELECTRONICS
4  HEATHKIT
5  ELECTRONIC SPECIALIST
6  LEADING EDGE
```

Step 4
After choosing an advertiser, you will be shown the list of following options:



```
1  PRINT PRODUCT DESCRIPTION
2  REQUEST MORE INFORMATION
3  RETURN TO LIST OF ADS
4  SELECT ANOTHER MONTH
5  EXIT ELECTRONIC BOUNCE BACK
```

Step 5a
Selection 1 displays brief product descriptions.

Step 5b
Selection 2 sends your name, address and ID number to the selected advertiser. You will also be presented with a Comment option. You will be given three lines to make your request to the advertiser.

Step 6
After completing your request, the option menu (step 4) will be redisplayed.

Electronic Bounce Back puts you into direct contact with our advertisers.

When you respond to an ad in TODAY Magazine, you're "talking" directly to the advertiser. This means an end to the weeks of delay it takes for an ordinary reader service card to reach an advertiser (not to mention the additional time lapse for an advertiser to answer your inquiry once it is received).

EBB not only lets you respond to an ad with the usual name and address information, but it also allows you to ask for specific information, leave additional comments or in some cases even order a product. The advertiser in turn can reply, if so desired, through our electronic mail system, Email™.

TODAY is the first magazine to develop an "electronic" reader service and take advantage of the 2-way communications capabilities available through the use of videotex technology.

Electronic Bounce Back is easy to use. Just GO-EBB and follow the prompts. EBB will allow you to review an index of advertisers or go directly to the ordering section. Users of EBB will be able to request information from present advertisers in each issue of TODAY as well as from advertisers in past issues.

So GO-EBB and give it a try. We've cut out the middle man so CompuServe customers and advertisers can communicate directly with each other. This means a faster response to your inquiries and an added convenience for TODAY readers.

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THE VIDEOTEX/COMPUTER MAGAZINE

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Columbus, Ohio 43220
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TODAY
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HOME

14 **Southampton: America's Most Technologically Advanced Community**
Southampton, a planned community north of San Francisco is one of the nation's most progressive "electronic cottages," with solar-powered, computerized homes that are the ultimate in self-sufficiency and convenience.

18 **Living, Learning and Laboring With the Micro**
As the microcomputer and computer networks become an integral part of the home, American families will find many benefits — and a few problems.

20 **"Modem Wars"**
Not long ago, few people knew what a modem was. Now the modem has become the center of controversy in an economic struggle between network users, telephone companies and the Federal Communications Commission.

TECHNICAL/TUTORIAL

24 **Word Processing Add-Ons**
Users can make word processors do all the grunt work with the addition of programs that check spelling, look up synonyms and perform other time-consuming writing chores. TODAY Reviews Editor Ernest E. Mau takes a look at several word processing add-ons.

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34 **Hardware**
***Appli-Card** 6MHz co-processor from Personal Computer Products Inc.*
***128KDE Soft Disk** RAM-based disk emulator from Legend Industries Ltd.*
***Elite Telephone Headset** from ACS Communications Inc.*
***Password Modem** from U.S. Robotics Inc.*

37 **Software**
***Crosstalk XIV** computer communications package from Microstuf Inc.*
***Data Ace** database management system from Computer Software Design*
***Tekterm** terminal communications software from Fountain Computer Products*
***Know Your Client** for the IBM PC from Aeronica Inc.*

40 **Books**
***IBM User's Guide** — William C. Brown, Publishers*
***Making Money With Your Microcomputer** — Tab Books Inc.*
***Smalltalk-80** — Addison-Wesley*

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DECEMBER, 1983
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THE VIDEOTEX/COMPUTER MAGAZINE
HOME
Living, Learning and Laboring with the Micro
Modem Wars
Word Processing Add-Ons

Cover
"Computers in the Home"
TODAY looks at the role of the computer in the home of the '80s.
Cover illustration by Mary Lynn Blasutta.

WordStar Response

The letter from Linda and Phillip Jones concerning a "global" search technique for replacing hard carriage returns with WordStar (October 1983), needs to be approached cautiously. My original article, "Networking with WordStar" (June 1983) omitted that technique deliberately because of potential difficulties.

It worked very well for versions of WordStar prior to 3.0 — versions not using horizontal screen scrolling. However, versions with horizontal scrolling for long lines can run into trouble.

If the document is only a page or so, there's no problem. Longer documents are a problem since they're boiled down to one long line during the intermediate editing. As the length of that line increases, the time to search for and replace the next hard carriage return also increases, eventually seeming almost geometric. Several times, I've locked up WordStar in such searches for well over an hour, and I've seen a single operation such as moving the cursor to the beginning of the document take more than 15 minutes when such a long line has been involved.

There's also a possibility of losing parts of documents since newer WordStar programs seem not to know how to store long lines on disk during the editing phase (remember text is moved to and from disk automatically as necessary when the processor progresses through a lengthy document).

Therefore, I recommend using the technique described in the letter with caution — in many cases, the manual search and verify technique I described in the article itself will prove faster, more reliable, and more convenient.

Ernest E. Mau
Aurora, Colo.

Execuware

We at Execuware would like to thank you for your review of the Next Step software package, which ran in your September issue. While on the whole we feel that the review was reflective of Next Step's capabilities, we were disappointed in the explanation of Next Step's search capability and would like to clear up possible confusion.

In the review, it was stated that Next Step's search capabilities were rather limited because it could not distin-

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third down
and six.

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Ah, but watch the defense. A fumble here and an interception there, and you'll be carrying the water bucket again. Stiff competition? Of course! That's why your team's success depends on your armchair quaterbacking skill. (You *have* been practicing all season, haven't you?)

So, c'mon and play Football. Those Cowboys aren't so tough!

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To play Football select "Games and Entertainment" from the Home Service menu or type GO GAM-27

ULTRA Diskettes

Now...Diskettes you can swear by, not swear at.

Lucky for you, the diskette buyer, there are many diskette brands to choose from. Some brands are good, some not as good, and some you wouldn't think of trusting with even one byte of your valuable data. Sadly, some manufacturers have put their profit motive ahead of creating quality products. This has resulted in an abundance of low quality but rather expensive diskettes in the marketplace.

A NEW COMPANY WAS NEEDED AND STARTED

Fortunately, other people in the diskette industry recognized that making ultra-high quality diskettes required the *best* and newest manufacturing equipment as well as the best people to operate this equipment. Since most manufacturers seemed satisfied to give you only the everyday quality now available, an assemblage of quality conscious individuals decided to start a new company to give you a new and better diskette. They called this product the *Ultra* diskette, and you're going to love them. Now you have a product you can swear by, not swear at.

HOW THEY MADE THE BEST DISKETTES EVEN BETTER

The management of *Ultra* Magnetics then hired all the top brains in the diskette industry to make the *Ultra* product. Then these top bananas (sometimes called floppy freaks) created a new standard of diskette quality and reliability. To learn the "manufacturing secrets" of the top diskette makers, they've also hired the remaining "magnetic media moguls" from competitors such as Verbatim, Memorex, Dysan and many more. Then all these top-dollar engineers, physicists, research scientists and production experts (if they've missed you, send in your resume to *Ultra*) were given one directive...to pool all their manufacturing know-how and create a new, better diskette.

HOW ULTRA DISKETTES ARE MANUFACTURED

The *Ultra* Magnetics crew then assembled the newest, totally quality monitored, automated production line in the industry. We know that some of Ultra's competitors are still making magnetic media on equipment that is old enough to vote. Since all manufacturing equipment at *Ultra* is new, it's easy for *Ultra* to consistently make better diskettes. You can always be assured of ultra-tight tolerances and superb dependability when you use *Ultra*. If all this manufacturing mumbo-jumbo doesn't impress you, we're sure that at least one of these other benefits from using *Ultra* diskettes will:

1. **TOTAL SURFACE TESTING** - For maximum reliability, and to lessen the likelihood of disk errors, all diskettes must be totally surface tested. At *Ultra*, each diskette is 100% surface tested. *Ultra* is so picky in their testing, they even test the tracks that are in between the regular tracks.
2. **COMPLETE LINE OF PRODUCTS** - For a diskette to be useful to you and your computer, it must be compatable physically. *Ultra* Magnetics has an entire line of 5¼-inch and 8-inch diskettes.
3. **SPECIALLY LUBRICATED DISK** - *Ultra* uses a special oxide lubricant which is added to the base media in the production of their diskettes. This gives you a better disk drive head to media contact and longer head and disk life.
4. **HIGH TEMPERATURE/LOW-MARRING JACKET** - A unique high temperature and low-marring vinyl jacket allows use of their product where other diskettes won't work. This special jacket is more rigid than other diskettes and helps eliminate dust on the jacket.
5. **REINFORCED HUB RINGS** - Standard on all *Ultra* mini-disks, to strengthen the center hub hole. This increases the life of the disk to save you money and increase overall diskette reliability.
6. **DISK DURABILITY** - *Ultra* disks will beat all industry standards for reliability at well over millions and millions of revolutions. They are compatible with all industry specifications as established by ANSI, ECMA, ISO and JIS.
7. **CUSTOMER ORIENTED PACKAGING** - All *Ultra* disks are packaged 10 disks to a carton and 10 cartons to a case. The economy bulk pack is packaged 100 disks to a case without envelopes or labels.
8. **LIFETIME WARRANTY** - If all else fails, remember, all disks made by *Ultra* Magnetics, (except bulk pack) have a lifetime warranty. If your *Ultra* disks fail to meet factory specifications, *Ultra* Magnetics will replace them under the terms of their warranty.
9. **SUPERB VALUE** - With Ultra's automated production line, high-quality, error-free disks are yours without high cost.

SAVE ON ULTRA DISKETTES Product Description	Part #	CE quant. 100 price per disc ($)
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8″ SSDD IBM Compatible (128 B/S, 26 Sectors)	81701	2.49
8″ DSDD Soft Sector (Unformatted)	82701	3.19
8″ DSDD Soft Sector (1024 B/S, 8 Sectors)	82708	3.19
5¼″ SSSD Soft Sector w/Hub Ring	50001	1.79
5¼″ Same as above, but bulk pack w/o envelope	00153	1.39
5¼″ SSSD 10 Hard Sector w/Hub Ring	50010	1.79
5¼″ SSSD 16 Hard Sector w/Hub Ring	50016	1.79
5¼″ SSDD Soft Sector w/Hub Ring	51401	1.89
5¼″ Same as above, but bulk pack w/o envelope	00096	1.49
5¼″ SSDD 10 Hard Sector w/Hub Ring	51410	1.89
5¼″ SSDD 16 Hard Sector w/Hub Ring	51416	1.89
5¼″ DSDD Soft Sector w/Hub Ring	52401	2.79
5¼″ Same as above, but bulk pack w/o envelope	00140	2.39
5¼″ DSDD 10 Hard Sector w/Hub Ring	52410	2.79
5¼″ DSDD 16 Hard Sector w/Hub Ring	52416	2.79
5¼″ SSQD Soft Sector w/Hub Ring (96 TPI)	51801	2.49
5¼″ DSQD Soft Sector w/Hub Ring (96 TPI)	52801	3.49

SSSD = Single Sided Single Density; SSDD = Single Sided Double Density; DSDD = Double Sided Double Density; SSQD = Single Sided Quad Density; DSQD = Double Sided Quad Density; TPI = Tracks per inch.
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guish between different fields on a form, it did not allow for wild card searches, and it could not distinguish a search for the city of Chicago from a search for a Chicagoan Raincoat. While this is certainly true for one of Next Step's search functions, it is not true for Next Step's most important search function Get a Record on a Key. Next Step has two distinct search capabilities, Get a Record on a Key and search. Let me explain the difference.

Next Step's search capability was developed as a release valve in case a user wanted to find a record when: a) a user couldn't remember any or part of any of the key information, or b) if a user wanted to call up information using his own infrequently used search criteria.

This method of searching (a sequentially slow search) was designed to be used for the exception and not the rule.

Next Step's Get a Record on a Key capability is the primary method of calling up data. Next Step allows up to 15 key fields to be specified for retrieving records. Records may be found when one or all of the keys are known. Records may also be found when only part of a key is know and even wild card key selections are possible. Next Step uses a B Tree file structure to handle key searches in order to provide for easy file maintenance (no sorting necessary) and to provide for relatively fast retrieval.

These two methods of searching for data were specifically designed to give users the utmost in flexibility.

Alan H. Bills
Director of Software Engineering
Execuware
Charlotte, N.C.

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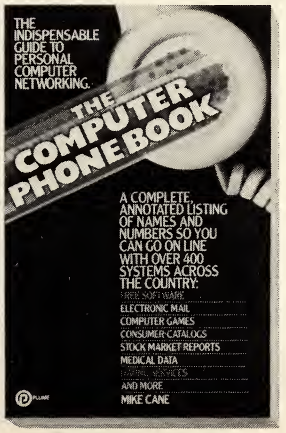

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DEAR READER

Recently TODAY magazine conducted a readership survey. In letters attached to survey forms, we promised to share the results of this survey with our readers. We received more than 1,000 responses to a combined mail/on-line survey and would like to thank readers who took the time to answer all questions in the lengthy poll.

In the past year, TODAY has grown from a bi-monthly publication with a readership of 60,000 to a monthly magazine with a circulation of more than 120,000. Despite the rapid acceleration of circulation, the composition of our readership has remained fairly constant. The average reader holds a professional or managerial job, is a male, 30-39 years of age, college educated with an income of more than $25,000. More than 50 percent of our readers have incomes exceeding $40,000.

Most TODAY readers are computer-oriented, as might be expected. More than 60 percent of TODAY's readers have spent more than $1,000 for computer equipment in the past year, and more than 94 percent plan to make additional purchases in the coming year. About 58 percent spend one to four hours daily on their computer and most use it for a combination of business and personal use.

How do TODAY's readers feel about the magazine? More than 60 percent of our readers save back issues of TODAY for future reference. The most popular sections are the hardware and software reviews followed by new product announcements (Industry Watch), technical/tutorial articles and Home and Business/Professional section material. Most readers consider news and information and the technical materials to be the magazine's best features. Most readers said there were no "worst" features but that they would prefer to see fewer articles about people.

Many survey respondents expressed interest in more "nuts and bolts" material on navigating and using information services. We feel the introduction of the "Beginner's Corner" column for novice and intermediate users and the business-oriented, advanced-application articles such as the "Online Information Retrieval" series (October and November) is a healthy start.

While surveys provide a sample of readership preferences and needs, the guidance is thumbnail at best. We urge you to take advantage of your direct link to the magazine via your information service. Write to us and tell us how TODAY can serve you better. Our CompuServe Consumer Information Service address is 70003,1372. We also have an address on the new CompuServe Executive Information Service at 76003,104. If you prefer, you may use the FEEDBACK area of either service to send mail. Also, TODAY will soon establish additional electronic mailboxes on other information services to serve you.

Douglas Branstetter
Editor

TODAY magazine December, 1983
Volume 2 Number 13

Published by CompuServe Incorporated
an H&R Block Company

Editorial and Advertising Offices
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, Ohio 43220
(614) 457-8600

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TELELEARNING: THE LATEST IN ON-LINE KNOWLEDGE

Remember putting on those invisible "listening ears" for your kindergarten teacher, adjusting them so they fit just right, and then being miraculously equipped to settle down and learn? TeleLearning Systems Inc., a San Francisco-based computer company headed by former Atari CEO Ron Gordon, has taken that old teaching idea and made it electronic.

The TeleLearning method brings together, a company spokesman says, "the time-honored correspondence course with the latest advances in high technology." Students will receive their lectures canned on TeleLearning disks or cartridges for fees ranging from $35 to $100 per course. Nothing new in the old computer-assisted instruction approach. But wait — there's more, says Gordon. Students will also have 24-hour access to instructors through Telenet, Tymnet and Uninet and can converse in real time as well as leave messages via electronic mail. To interact, students must equip their phone jacks with a "knowledge module," which the company claims is "far more intelligent" than other modem devices. "Knowledge modules" cost between $119 and $229, depending on the type of computer used.

Illustrated Alaskan Moose

Although students taking any of the 170 mostly how-to and liberal arts courses including "How to Discuss Sex with Your Child," "Crap Shooting for the Innocent," and "Now It Can Make You Richer — 50 Viable Approaches to Making Money with Your Microcomputer," won't actually meet their teachers in person, they will see them electronically via digitally-transmitted pictures. Among those whose visages will visit TeleLearners are attorney Melvin Belli who will teach a course called "Personal Law."

Belli isn't the only biggie the new company has in its corner. In certainly one of the largest PR coups for a private high-tech company, TeleLearning obtained an endorsement from the Reagan Administration and Education Secretary Terrel H. Bell. The latter's spokesman said Bell was "highlighting" rather than endorsing a private product.

A confident Gordon calls TeleLearning "the world's first electronic university" and "the ultimate electronic tool." Still, there are a few kinks to work out. One is accreditation, which Gordon says is now "under study." The other is whether home computer owners will be interested in buying the TeleLearning high-tech approach to fairly simple subjects when a free, though admittedly low-tech, trip to the library might do the trick just as well.

— Carole Houze Gerber

COMPUTER BLUEBOOK

In the last year, the number of computer-for-sale classified ads running in the typical American newspaper has grown almost fivefold. You don't need to be an expert to know that a year from now there will be even more such ads, considering the popularity of personal computers.

But out of the hundreds of different computers now available, how does anyone looking for a used computer determine what is a fair price? That same question has occurred to some people in Reno, Nev., and the solution they have come up with may prove a boon to all personal computer enthusiasts, whether interested in buying or selling a computer system. What they've done is to create the Computer Classified Bluebook, the first edition of which came off the presses last October.

The idea is the same as the one behind the used car bluebooks: survey the used-microcomputer market to determine what microcomputers are selling for. Essentially, what the publishers do is to call people who have placed computer classified ads in 85 papers across the country and ask what they have sold their computers for. All 50 states are represented in the sample. The plan is to compile the information and publish it in the bluebook four times a year. The book retails for $85.

While aimed at a wide range of potential users, one of the book's most interested readers are local tax assessors. "We've gotten a lot of response from them," says publisher Ralph T. Heller, one of a group of local businessmen who put together the bluebook. "They were the first mailing list we mailed to for potential subscribers. This will give them something to base their personal property tax assessments on." Others subscribers include insurance adjusters "who've had to make arbitrary adjustments in the past," and leasing companies, as well as computer hobbyists, Heller says.

"Most computer stores are refusing to take used computers as trade-ins," Heller says. "So the only place you're going to find used computers is in the classifieds." That means the market is disorganized, but despite that, Heller says his survey shows that the prices on used computers are surprisingly uniform across the country.

For the first issue, 184 different microcomputers were surveyed. That number will be increased every other issue, with intervening issues simply updating the previous issue's price guide. Included will be such things as original sales price, when the computer was first manufactured, what it features, whether it has a multi-user or CP/M capability, and so on.

For additional information, contact Computer Classified Bluebook, P.O. Box 3395, Reno, Nev. 89505 (702) 322-8811.

— John Edwards

AN ORBITING APPLE

The late-October Spacelab mission of NASA's Space Shuttle marked a first for the microcomputer industry. It was the first time a commercially available micro was used aboard a manned spacecraft.

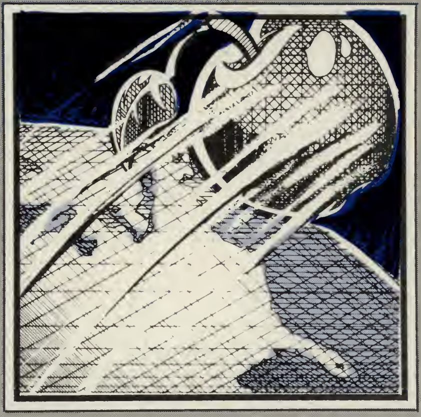
Included in this mission was a self-contained, automated laboratory designated "Experiment 101" by NASA. A biological experiment examining the effects of gravity or the lack of gravity on plant growth, the laboratory was controlled and monitored by an Apple II computer interfaced to the laboratory equipment through devices from Interactive Structures Inc.

The experiment was conceived in 1977 by University of Pennsylvania biologist Dr. Allan Brown. He and other scientists have been puzzled by the helical or spiral growth characteristics demonstrated by some plants shortly after germination. The question has been whether that pattern is due to gravitational influences or evolutionary processes.

To test the effect of gravity, it's necessary to negate gravity — something that cannot be done adequately on Earth. Attempts to counteract gravity with centrifuges and other devices introduce their own forces and effects. Therefore, the most satisfactory experiment would be conducted in a "weightless" environment such as an orbiting laboratory.

As one of the early experiments approved by NASA for the Spacelab mission, it faced serious logistical problems. At the time, the microcomputer industry was in its infancy and was unsophisticated by today's standards. With the help of Dr. M. Joseph Wilson, president of Interactive Structures Inc., Dr. Brown began a four-year process of preparing his experiment.

The result was a miniature laboratory measuring 2- by 2- by 6-feet and containing a precision centrifuge, video cameras and recorders, lighting, temperature controls, instrumentation, and the computer. The centrifuge was used to produce an artificial and precisely controllable 1-g gravitational equivalent for one group of plants whose growth would be compared with another group of "stationary" or 0-g plants. For six days, the lab was to monitor and record the growth of *Helianthus* (sunflower) plants following germination from seeds selected for optimum growth immediately after the launch.



Operating through the Interactive Structures' interfaces, the computer was to monitor and control the centrifuge motor to maintain constant gravitational pull on one group of plants; switch cameras, lights, and recorders on and off; verify recording of data; and maintain constant temperature.

The entire setup had to pass NASA tests and meet stringent requirements for reliability, compactness, and "spaceworthiness." According to Dr. Wilson, only a few modifications to a stock Apple II were necessary.

First, the IC chips had to be soldered into place instead of being fitted into sockets. That was a concession to the vibrations inherent in the launch and would prevent dislodging chips and ultimate failure of the computer.

Second, the interface cards had to be secured in the expansion slots, using rigid "holddowns" to keep them from working loose under vibration.

Third, the entire computer was conformally coated with an insulator to prevent penetration by any metal particles floating around in a weightless condition.

Fourth, it was mounted in a metal cabinet so other elements of the experiment could be located close around it.

The Interactive Structures' interfaces were completely standard items. They included a bidirectional digital interface for the instrument controls and an analog input system for temperature monitoring. Both are members of the Data Acquisition and Instrument Systems Interface (DAISI) family of products.

The entire experiment was powered from the Spacelab's 28VDC power system, though the supply to the Apple was extensively regulated, filtered, and isolated to prevent interference with or from the main power system.

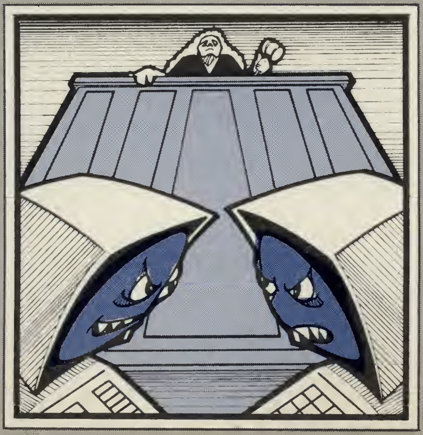
All in all, an ingenious application for a microcomputer.

— Ernest E. Mau

VISISUE

News from the software courts: VisiCorp, the seller of VisiCalc, has sued Software Arts Inc. for $50 million in damages. What makes this case interesting is the fact that Software Arts is the company that originally developed the pioneer electronic spreadsheet package.

In 1979, Software Arts signed a long-term agreement with VisiCorp to market VisiCalc. Now the two are arguing over who's responsible for what. VisiCorp is claiming that it's not getting paid by Software Arts for various software enhancements it made to the program. Software Arts, for its part, claims the agreement doesn't cover such software additions.



PET BYTES

The computer industry seems to be fertile ground for budding entrepreneurs to sell pet rock-like gimmicks.

Naturally, one of the first of such items was a "Computer widow" T-shirt, followed quickly by other T-shirts proclaiming "I'm bilingual — I speak English and BASIC," "Computer Lesson No. 1 — computer chip, potato chip, cow chip," "Byte my bits" and "Have you hugged your programmer today?"

Also on the scene are:

- The "byte bat." This is a 17-inch-long foam-rubber bat computer users may employ to pound out their frustrations without hurting their computers when response time is too slow or a screenful of data is lost.
- A "Magic Computer Input/Output Mug," adorned with a sketch of a computer and the words "Programmer on duty." When hot liquid is poured into the cup, the words fade away and the phrase "Programmer off duty" appears on the screen.

- A "Programmer's Excuse Pad." This notepad of miniature read-out sheets contains a checklist of 12 reasons why the program just didn't execute.
- A "Custom-built Caddy." This plastic desk caddy is shaped like a computer terminal, and the screen is actually a frame for a photo. The caddy comes in two models — one is a desk organizer to hold your pencils, etc.; the other is a bank so you can save your coins toward a real computer.
- Giant paper clips marked "Big Bytes" and "Random Access."
- A "Programmer's Puzzle." A 600-piece jigsaw puzzle that's sure to "gridlock" you. When completed (ha! ha!) you'll have an 18- by 24-inch blowup of a microchip.
- A wall clock for programmers with the hours designated in binary. Only you and your techie friends will know what time it is.
- And for people who like to collect antiques, there's the "Memory Block" — a clear Lucite cube that contains a fragment of history, in this case a piece of magnetic core memory from an IBM 360 computer (circa 1964 to 1969).

But even low-tech products are getting in on the craze. For example, the new "shirt pocket calculator" that features a "telecommunications package." To use it, you insert an 8- by 10-inch sheet of white paper under the unit, call a friend on the phone and compare homework answers. The product? A ballpoint pen.

— Pamela Bowen

DIGITIZING THE BIBLE

If Doug Vos is successful, dialing up the King James version of the Bible in any area code of the country will be possible by 1988. The book of Romans is online in one city already.

Vos is one of the founders of the Christian Computer Users Association (CCUA), which has 220 evangelical Christians as participants. Based in Grand Rapids, Mich., the CCUA publishes a bimonthly newsletter; does consulting work for churches, using computers to count contributions and help pastors research sermons; and operates the "Good News Information System." This database includes CBB and electronic mail capabilities as well as the text of St. Paul's epistle to the church at Rome, which can be searched for specific verses or by topic. Commentaries and notes on the scripture are also available but not widely used these days.

For Christians, "networking is yet to explode," Vos says. A large number of Christians have computers — as well as disk drives and printers — but few have modems, according to a recent CCUA direct mailing to 2,000 Christian computer owners. He believes the numbers will change after the Christmas season when the telecommunications devices — and necessary software — become stocking stuffers.

Such a happening would be a boon to CCUA and related groups like

Computers for Christ (San Diego, Calif.) and Bible Research Network (Beaverton, Ore.). CFC has a database of information on cults and a "World Missions Quiz" available; BRN is planning to put the teachings of Martin Luther, John Calvin and other Christian scholars online.

Though questioned by some about the computer's potential for misuse, Vos defends the application of micros to religious needs and the current cost of linking up to databases such as CCUA's. "Five hundred years ago, nobody could afford to have a copy of the scriptures. In five years from now, I believe you'll have the entire Bible on a floppy disk."

— Mark A. Kellner

NAVIGATING THE NETWORK

We've all seen the advertisements. "Access to the biggest database in the world with just the touch of a button!" "A libraryfull of information at your fingertips!" "As easy as dialing your telephone!" Is it really that easy to learn your way around a network?

Yes and no.

Large networks such as CompuServe and The Source are just that: large. Finding what you need is not impossible, but neither is it always a snap. No one is trying to make it difficult for you: The network's success depends upon making it easy! But the neophyte's ease is the expert's boredom. Networks are set up to take the new user by the hand, while letting the more experienced regular user hop from one section to another.

Let's say, then, that you've never been "online" before. You have your access number, password and/or code and guidebook in front of you. Gingerly, you key in the information required to enter the network. Suddenly, the host computer takes over your screen. At first, the cursor flies across your field of vision so fast it's hard to handle. (Don't worry — soon enough, you'll think it's too slow.) You're online!

Different networks will send you different greetings the first time you enter. Some, such as CompuServe, send you directly to a special page designed to help you learn your way around. Others start you at the same spot as any experienced user, relying on your documentation to help you through the maze. In the latter case, open that documentation and find the page that tells you what to do when you first access the system. In the former, follow the instructions that appear on your screen.

Those early pages are important! Sometimes they lead directly to helpful "on-line documentation." Often they allow you to configure the host computer's responses to your particular computer terminal. In either case, the opening pages are there to save you time, frustration and money. So resist the temptation to try out the "direct access" or "go" codes in your user manual. They'll come in handy when you're an experienced user, but for the moment you should learn your way around the system.

The easiest way to do that is to follow the menus. Keep writing materials nearby; you'll want to take notes. Somewhere on the first menu you'll find an option offering "user information" or "instructions." Take a closer look at this item. When you choose it, you'll be given a choice of various kinds of information about the system. You might find the latest additions to the paper documentation you've already received. Or it might lead you to new offerings on the network, so new that the printed index does not have them listed yet. No matter what, you'll get something extra, and you'll find that extra something very useful.

Illustrated Alaskan Moose

Now you're ready to wander around the network. Return to that top page and pick another option. Games might interest you or professional services. Whatever you choose will lead you to another menu. At times those menus will seem to go on forever, forming an endless chain of descending ladders. Eventually — often very swiftly — you'll find yourself on one of the separate "services" that make up a packet network.

Partially due to the separate sources of those services, partially because different services produce and require different types of information, each service is likely to have a somewhat different set of commands. The electronic mail service won't work in the same fashion as the on-line airplane guide. Neither will use the same protocol as the various special interest bulletin boards. And the electronic news service may be completely menu-driven, or it might require a special set of commands.

When you need help, ask the system!

Menu-driven services usually include a menu item with instructions. When the service you've chosen lacks such an option, try a standard command. Your user's guide will tell you which one to use. Often, a simple question mark will suffice. Other systems expect you to say "help." If you're likely to use the service again, be sure to take notes. When the instructions are complex enough, open your capture buffer, if your terminal communications software will permit.

Keep in mind the fact that, like the host network itself, each service on the network may well have two different sets of commands. One will be "idiot proof," formed out of linked menus. Another will be command-driven for the experienced user. Once you're familiar with the menu structure, take a closer look at the command option. It will save you costly time on the network once you're ready for it. But don't leap in too swiftly. A novice's experiments can lead to considerable frustration and relatively little knowledge.

So you've been through the printed documentation, read the on-line instructions, tried the help command, and you're still confused. Fear not! There remain two sources of aid we haven't mentioned yet. Most packet networks have a special problem-solving service. A message left there will produce a swift reply supplying the information you need. On CompuServe, for example, you can leave your questions in the FEEDBACK section; your reply will come by EMAIL, the network's electronic mail system.

Finally, remember that the system has other subscribers, all of whom were once as confused as you are now. You can reach them directly, in real time, by using the network's CB, talk, or conference command. The instructions for these services are often among the least perplexing on the network. The other subscribers that you meet there are usually friendly and helpful.

They remember when they started, too.

Alex Krislov is a Cleveland-based free-lance writer. His CompuServe User ID is 76703,243.

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SOUTHAMPTON:
America's Most Technologically Advanced Community

by Francine Sevel

"You say you're looking for a new home with two or three bedrooms in the $120,000-$150,000 price range? How about Southampton?" beams the eager real estate agent. "Our homes are as close to the 'House of Tomorrow' as you'll find. Each home is computer-ready — prewired so you can easily access other computers world-wide. You can take advantage of computerized information services, on-line shopping and computer banking.

"Tired of paying high utility bills? Our solar homes are probably the most energy efficient homes in America. Each one features active and passive solar space and water heating, an extensive energy conservation package and qualifies the homeowner for a $4,000 federal tax credit. Look around, you won't find a more cost-effective, technologically innovative home anywhere.

"What? You say you don't have a computer and can't afford one if you buy a $140,000 home? Well, you can finance a computer with your Southampton home. You can choose up to $3,500 worth of computer equipment and finance it with your house for 30 or 40 years and with only five percent down. Where can you beat that?"

Computer-ready, solar homes? Some real estate agents will say anything to get you to look at their houses. But in a 32-acre subdivision of Benicia, Calif., the real estate agents aren't exaggerating when they say they can show you the home of tomorrow today.

Southampton, a planned community 34 miles north of San Francisco, is on its way to becoming the nation's most technologically advanced residential community. With over 150 solar homes built since 1981 and an estimated 800-1,000 to be completed by the early 1990s, Southampton is the first and most extensive solar village in California.

The developer's recent decision to install computer-ready features in all of the community's single family and solar homes ranks the alternative energy homes among the nation's most progressive electronic cottages. "We very likely have what can be considered the prototype for the home of tomorrow," says Southampton Co. partner Victor Freeman. "We have a home that is as self-sufficient and convenience oriented as one can find."

Specifically designed for computer networking, the electronic cottages feature dual phone lines that allow the user to communicate with other computers while using the phone for conventional purposes. The homes are also prewired for use of the micro in the den or in the smallest bedroom, which doubles as a workstation.

Moreover, as the salesman said, homeowners can finance up to $3,500 worth of computer equipment with their home mortgage. Thus, for an additional $25-30 a month, the buyer can finance both his first home and his first computer, become a two computer family, or invest in those fancy high-tech peripherals that turn the appliances on and off.

"The customer picks out the computer equipment of their choice, and when the house closes escrow, they give us the purchase order," explains Ron Herman, Southampton's advertising director. Herman points out that most stores will only let you finance computers for a couple of years. Indeed, a micro, modem, printer and a few software packages could easily add $150-200 a month payment to your stack of bills. You don't have to be a CPA to figure that this could be a little steep for someone who just paid an eighth of a million dollars on a new house. But another $25 or $30 a month is affordable.

Southampton Co. began building its solar community in 1981. The public's receptiveness of this innovation convinced them of a general willingness to accept new technology in the home. "We began to think what would be the next thing that someone would find useful in the home, and the next obvious step was computer capability," says Victor Freeman.

"Our homes are ready for two-way communication," he continues. "People can now utilize computer shopping, information services, electronic newspapers, financial information networks and the like."

Freeman says they would like to attract professional or semi-professional couples in their late-20s to mid-50s with a combined income of around $40,000. Generally speaking, these demographics correspond closely with the demographics of the target market for home computers and on-line services.

Industry experts estimate that approximately four percent of all U.S. households have home computers, and 25 percent will go computer within the next 10 years. Thus, another selling point is the notion that even if you're intimidated by technology and wouldn't be caught dead sending on-line messages to people called "Space Invader" or "Orion," the person who buys your house two or 22 years down the road may be eager to replace the miseries of commuting with the luxury of an electronic cottage. "We're providing the home buyer with a home that won't be obsolete five years from now," Freeman states.

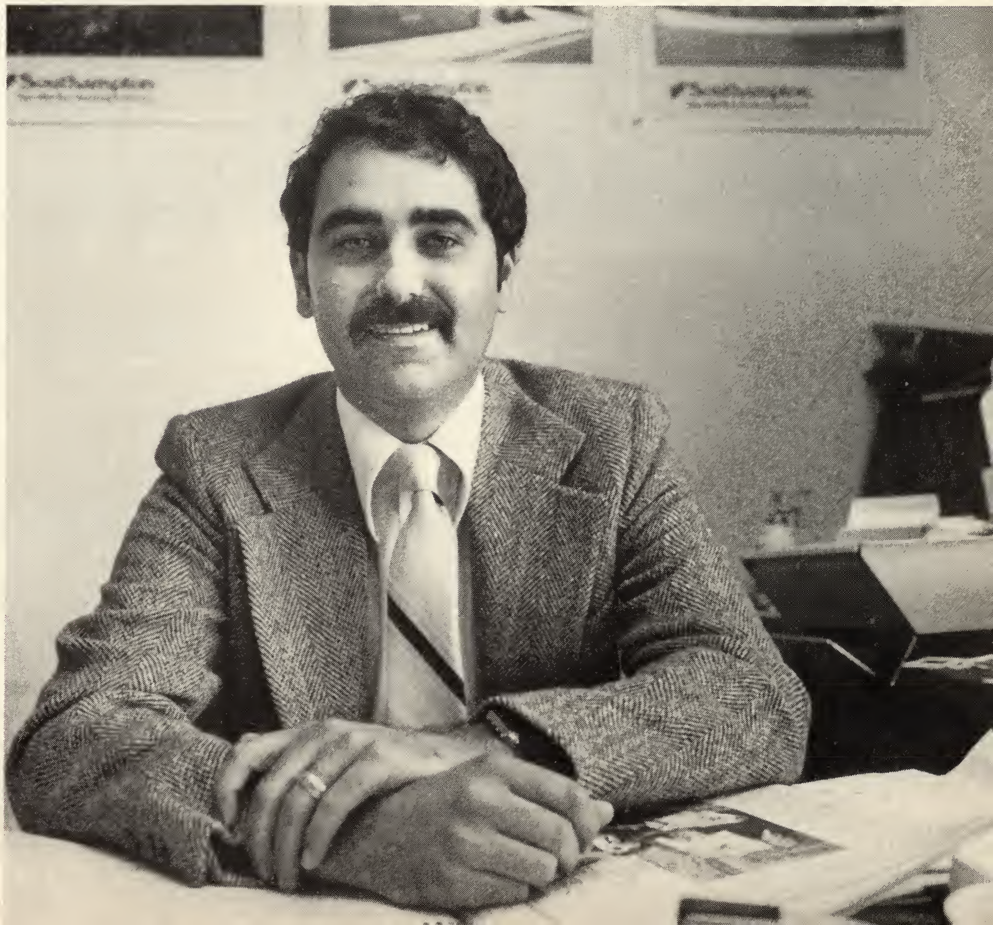
Presently, most Southampton residents are commuters. Herman estimates that over 50 percent work in the metropolitan San Francisco-Oakland area; 25 percent work in nearby Contra Costa County, and another 25 percent are employed 60 miles away in the infamous Silicon Valley.

"Somebody who works in San Francisco may spend 45 minutes to an hour going to work and maybe another hour going home from their office," he notes. "For the person who works behind a computer five days a week with our dual phone lines, he can easily and efficiently access his office computer and save time, money and energy by working out of his home." Similarly, a small businessman with retail shops scattered throughout the Bay Area could be more productive if he skipped the hassles of fighting traffic and electronically communicated with his stores and suppliers.

Equipped with two phone jacks, an electrical outlet and an overhead light, the closet of the smallest bedroom doubles as a computer workstation. The hobbyist wishing to use the computer only occasionally can leave the closet doors on and have a spare bedroom when the computer is not in use. Or the entrepreneur wishing to setup an electronic cottage can take off the closet doors and have a computer alcove within his home office.

With computer wiring and phone jacks in both the bedroom and the den, Southampton is prepared for the two computer family. While mom or dad is reading an electronic newspaper or booking on-line plane reservations, the children can play computer games, use educational software or chat with on-line friends.

Southampton's vice president Victor Freeman (above) and ad manager Ron M. Herman: Making the microcomputer just another home appliance



George Olson

The solar energy features are also tremendous money savers. Solar home buyers qualify for a hefty $4,000 federal tax credit, and Ron Herman reports that most residents have average Pacific Gas & Electric utility bills of $22 in the summer and $34 in the winter. He's quick to add that they don't keep their thermostats at 55, most people keep their thermostats at 68-70 year-round.

Other energy saving features, in addition to active and passive space and water heating, include dual-glazed windows, microwave ovens, instant hot water dispensers, glass-doored air-recirculating fireplace systems and concrete slabs for thermal mass. Moreover, the wooded community itself features innovative and energy efficient approaches to landscape and design including watercourse management, a series of integrated pathways to encourage pedestrian traffic between homes, and drought-resistant street and front yard landscaping.

Although the first computer-ready solar home was only recently completed, the developers have already been receiving inquiries from people throughout the country.

"People seem to realize that our society is becoming quite computer oriented," Freeman says. "They accept the notion that a few years down the road a home computer is going to become as common a household appliance as a microwave or dishwasher is today."

Francine Sevel is a free-lance writer from Columbus, Ohio.

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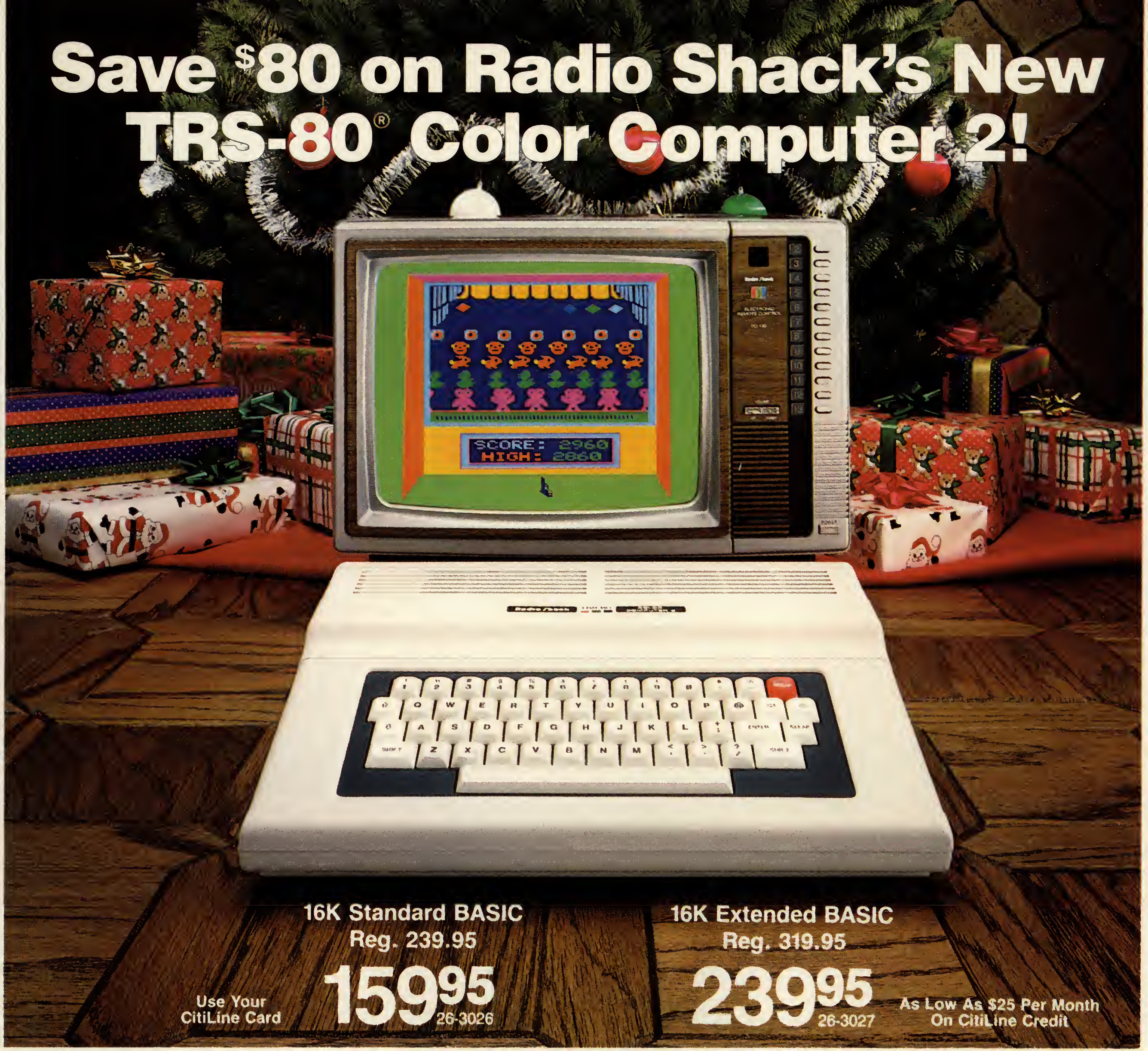

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Computers in the home

LIVING, LEARNING AND LABORING WITH THE MICRO

by Cathryn Conroy

The day when the average consumer owns two cars, a television set and a personal computer may not be right around the corner, but the computer is already causing dramatic changes in the way people live, learn and labor.

"It's quite possible to learn about computers and from computers," says La Jolla, Calif., clinical psychologist Thomas F. McDonald, "but it's even more important to learn with a computer — it becomes an essential part of your learning apparatus and an extension of the brain."

McDonald, one of a new breed of specialist who studies how computers affect relationships, notes that learning and recreational activities have been redefined and expanded for those happy families whose members have embraced the home machine. Instead of passively watching television or quietly reading books — activities that can segregate families into individual mental cocoons — many computing families interact with one another and the machine.

Electronic education

One reason for gathering around the CRT is the pursuit of education. Just as the one room schoolhouse was outmoded by the modern school system, so may that school system be pushed into obsolescence by the home computer.

"The home is changing by becoming a learning place," McDonald believes. "Schools could go out of existence because they would be useless. Why go someplace when you can learn better and faster right in the home?"

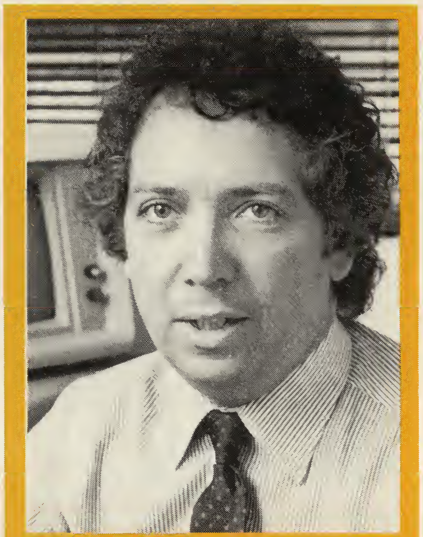
Specially designed software packages can teach preschoolers to read, write and compute, as well as assist the high school student with preparation for college boards. And home computers are making a significant difference in a child's ability to learn and in his enthusiasm to accomplish a task, according to McDonald. "Every bit of research I've seen has shown that children learn faster, better, more, retain it longer and enjoy the learning process (with computers), which is certainly more than you can say for school."

Suzanne Damarin, assistant professor in the Department of Educational Theory and Practice at Ohio State University, supports this: "Computers can individualize instruction so that children can work at their own level and pace. Research shows that educationally deprived children succeed much better with computers in ways they were not able to do in the traditional classroom. The computer doesn't know who the child is and can overlook a lot of human frailty."

Damarin also says that computers will better enable parents to help their children with school work. "One of the biggest problems with the new math was that parents were unable to provide the home support that is needed by many kids studying math. The parents were extremely insecure, unhappy and irate about the whole thing. But with computers you could easily supply the parents with the same experiences the kids are having and allow them to then supply the crucial home support."

More advanced students may even want to apply to the world's first electronic university, TeleLearning Systems of San Francisco, Calif. This interactive network is accessed via telephone lines, and student and teacher can converse in real time or by electronic mail. Students purchase the TeleLearning Knowledge Module, which contains a 300-baud modem, all connections software and a listing of course offerings.

Courses cost between $35 and $100, depending on the subject. There is no hourly fee to access the TeleLearning network, and "classrooms" are open 24 hours a day. Course topics are varied, ranging from business, the arts and gourmet living to parenting and investments. Students attend on-line lectures, take tests, write papers, and even have private tutoring sessions with the instructor.



Thomas F. McDonald

> "My major concern is that computers are being made the salvation of education. Kids are sometimes pushed into computers by parents who feel they will not otherwise be competitive . . ."

Social skills suffer

Like anything else, even learning with a computer can be abused. "If you allow a child to run rampant on a computer, what happens to the development of social skills that are necessary for successful adult living?" asks McDonald. "Those skills include the ability to express feelings and emotions, the ability to listen and to express oneself in sensitive terms, and all of these are not possible to do with a computer. If you interact with that type of device six, seven, eight hours a day, you begin to think that way.

"My major concern is that computers are being made the salvation of education. Kids are sometimes pushed into computers by parents who feel they will not otherwise be competitive, when in fact they may be missing out on a whole lot of other skills that are equally as important," warns McDonald.

Working at home

In addition to learning, many people are also finding ways to work at home with computers.

"The significance of this is rather serious," says McDonald. "It changes the complexity of the home and changes significantly the complexion of the family and child rearing practices."

Canadian researcher Dorothy Phillips is trying to envisage what will happen to society as the electronic cottage becomes more commonplace: "There will be massive, drastic changes if people start to work at home. It will change housing design because they will need a room for an office, and most houses are not built for that.

"It will also change the community," Phillips continues. "Perhaps there will be a community center where workers will go to meet their colleagues. But most importantly, what will happen to those who stay at home? Will they get out of the politics of the office and not do as well because of it? Will they end up doing nothing more than piecework? Those are serious issues. And many women, especially, do not like the idea of working at home, since they just got out of the house. The home is seen as a second class work place."

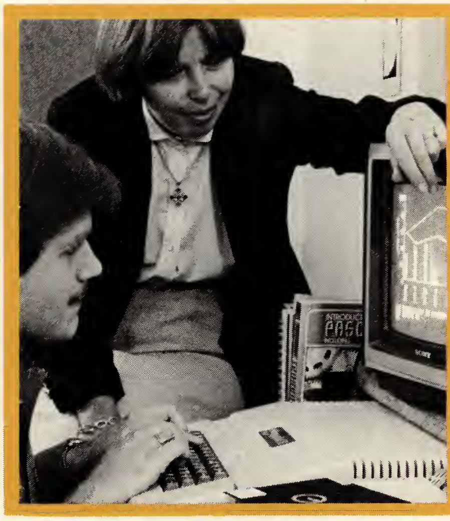
Networking expert Neil Shapiro believes that personal computers linked to corporate mainframes will in many cases eliminate the need for a centralized office complex. "People equipped with computers that can network together need not be in the same building or even in the same town or country in order to work closely together."

Ohio State education professor Suzanne Damarin says the computer will probably create more workaholics. "A lot of people will never stop working if there is a computer in the home."

Living with a computer

Even as the advances made by computers are being touted, all is not rosy with every computerized household. As long as most of the family feels kindly toward the machine most of the time, few problems will result.

But psychologists are discovering that difficulties can arise when a computer is adopted into a family, especially when one person is enthusiastic about the machine and others are resentful. Those are the folks who show up for McDonald's group therapy meetings for "computer widows" and their mates. (An occasional "widower" makes a sheepish appearance, but typically it's males whose wives resent the time they spend at the terminal.)



Suzanne Damarin

"Research shows that educationally deprived children succeed much better with computers in ways they were not able to do in the traditional classroom."

Some wives who were left out of the financial decision are mad before the machine is even unpacked, McDonald notes. The purchase of a computer is a very large chunk out of any family's budget, and if a couple doesn't discuss this expenditure and plan it together, serious marital difficulties can develop.

"If only one member of the family makes the decision without consulting the spouse or children, then it sets the stage for exclusion," says McDonald. "One person's vital time, energy and attention is paid not to something outside the home, but rather to something that is brought into the home with the other people being excluded directly. That causes an awful lot of resentment."

Many wives are jealous when what they thought would be a mate's pleasant pasttime becomes an ongoing passion. A few, whose husbands are obsessed with mastering the logic of various computer functions, suffer their mates' psychological abuse when their own behavior isn't so easily controlled.

Clinical psychologist Del Dobyns says many men enjoy interacting with a computer because it gives them a sense of control that they may not have at home. "They may have plenty of control at work, but at home they are just like Walter Middy. Once they sit down at that terminal, it is a whole different world."

McDonald adds, "A computer is logical, perfect and always at the user's command, giving constant reinforcement and feedback. But a person is not like that. People are emotional, demanding, sensitive, have their own ideas and resent commands."

While many men snap out of their self-absorption once their wives convince them to spend more time with their families, others aren't likely to change. McDonald, who's quick to agree that being a computer widow can be a lonely experience, says griping won't help.

Dobyns supports this: "This equipment is so seductive; it is like someone going down a Hobbit hole and never coming out again. The more you rail at the other person, the more he retreats into the system, and you won't even be able to find the end of the modem plug to pull him out again."

If you've been close-minded about the computer, give it a try, McDonald advises: You could master a new skill and grow closer to your spouse in the process. If you decide that computing simply isn't for you, don't sit around and stew about how it's robbing you of your mate. Get involved with interests of your own — that way, when the two of you do spend time together, you'll each have something new to bring to the relationship.

Cathryn Conroy is a free-lance writer from Columbus, Ohio. Her CompuServe User ID is 70007,417.

MODEM WARS

by Dave Peyton

Twenty years ago, only a handful of people knew what a modem was; fewer owned one.

The word itself was born from two technical words — MOdulate and DEModulate, which is what the device does: It turns electronic impulses into two frequencies that can be transmitted over a telephone line and transforms those frequencies into impulses the computer can understand.

Today, most people with even a passing acquaintance with computer terminology know what a modem is. In fact, modems have become standard equipment with many computer users. After all, the modem is the heart of computer communications. Without the little bundle of wires and electronic components, computers would be lonely islands in a sea of information. But with them, computers and their owners can communicate via standard telephone lines.

Strange that such a simple, helpful little device could cause the furor it did last summer in Oklahoma. Some tagged it the "modem wars." The controversy raised the ire of many computer users in Oklahoma and sounded a warning to computerists everywhere.

Southwestern Bell of Oklahoma made it known that it could and would tack a $49.50-per-month charge on the phone bill of anyone who used a modem connected to a computer or smart terminal on one end and a phone line on the other end. It didn't matter if the user was a hobbyist or a business user, or if the the modem was used five minutes a month or 24 hours a day. The charge was still set at $49.50 a month.

Then in late October, Southwestern Bell of Oklahoma changed its mind. It announced that it would seek approval to terminate the so called "modem charge" on Jan. 1.

Southwestern Bell had history on its side when it was still taking the position that it could charge a modem fee. The company obtained the right to charge the additional fee from a tariff passed in 1966 that states:

"Customer-provided data transmitting and receiving equipment that process data and/or perform calculations will be connected to the exchange network of the telephone company through the provisions of Information Terminal Service. Examples of data transmitting and receiving equipment would include computers, associated buffering devices and/or concentrating devices with store and forward capabilities located on the same or different premises."

Miles Kotay, a spokesman for Southwestern Bell in Oklahoma City, admitted the rule was written in the stone age of computerization when modems were the exclusive property of American businesses involved in transmitting large amounts of data. "But it's still a tariff, and as long as it's a tariff, we intend to enforce it."

The enforcement of the tariff has turned into perhaps the first quasi-political issue among computer hobbyists, who say they are being discriminated against because of their avocation.

The modem charge issue was brought to the attention of the media last spring when 16-year-old Robert Braver of Norman, Okla., began paying the Information Terminal fee and charging it was unfair to the hobbyists who used their modems only a few hours a week.

It began last May when Braver, who was operating a bulletin board service out of his home, complained to the Oklahoma City office of Southwestern Bell about a problem with harrassing calls to his service.

Southwestern Bell checked his records and found he had a modem connected to the lines and a computer connected to the modem. He was told he'd have to pay the modem charge.

Braver sounded the alarm. He contacted several local users and founded a modem users group. Then he told an Oklahoma City TV station about the charge. A camera crew and reporter came to his home to do a story about his fight and the modem charge he was paying.

The story aroused the anger of several Oklahoma modem users. One of them was Jerry Latham of Midwest City, Okla. Latham decided to do his part by speaking before several user's groups and circulating a petition to the Oklahoma Corporation Commission. Latham and others pointed out that if it was simply a matter of expected high telephone usage by those with a modem, people with modems in their homes probably have the modems connected to open lines less time than the average teen-ager spends on the telephone.

"If there's going to to be a modem connect charge, there ought to be a teen-ager connect charge," one user suggested.

There was never any indication Southwestern Bell of Oklahoma was searching its files for registered modems or scanning its lines for the familiar modem tone. And few people were paying the charge. Many were simply not reporting their modems to the phone company or taking other diversionary steps.

One Oklahoma modem user, who did not want to be identified, admitted he circumvented the tariff to get out of paying the charge.

When the issue came to the forefront, he started checking with Southwestern Bell about the specifics of the tariff.

"Once I started checking with Bell, they took an interest in my setup also, and thus, for a few days I was subject to the rule. I assured them I was disconnecting my equipment."

Then, he said, he read the rules which state that "teletypewriter machines and similar input terminal devices are not within the provision" of the tariff.

"I contacted the phone company and told them that I was reconnecting with a teletype with 300 baud capability," he said.

Southwestern took him at his word, he said, and never asked questions. Even today, as far as Southwestern is concerned, he has a teletype connected to his modem instead of a computer.

Concerned computer users feared that the fee could spread nationwide in a matter of months. The reason? "Ma Bell" is letting go of her 22 operating companies Jan. 1 (see story on page 20). And those companies are searching for new ways to make money on their own.

Some saw the Oklahoma Information Terminal fee as a trial balloon. If the fee held up in Oklahoma, it would hold up in the rest of the United States. And the operating companies would have found an easy way to make big bucks off the new technology explosion in America.

Kotay denied that the fee was a test case for all of America. And if it was a trial balloon, it apparently is of the leaden variety and sinking fast since

Illustrated Alaskan Moose

Southwestern Bell spokeman Miles Kotay on the modem charge: "It was a dinosaur tariff from the beginning."

Southwestern Bell has changed its mind.

"The tariff was enacted at a time when only businesses were using modems," Kotay said. "Most of these businesses transmitted data many hours a day. The terminal charge wasn't for data grade lines, but simply because our lines were being used so much of the time," he said.

Kotay added that what Southwestern Bell is saying by dropping the modem charge has been said before. "We are in the business of leasing lines, not providing or charging for the equipment connected to those lines."

THE SHOT THAT STARTED "MODEM WARS"

by J.H. Green

If you ever doubt that we're making headway in the quest for peace, just consider that for centuries most wars were fought over religion; now we've progressed to the point where we fight over economics instead. The pivotal issue seems to be how the fiscal engines will be governed. Marxists argue that government should own the means of production, but capitalists prefer that the free market act as the divine regulator with prices controlled by competition.

When it comes to telephone rates, we have a synthesis of the two. The hardware is privately owned, but government decrees how much the owners can charge for its use. When telephone regulation was devised to ward off a threat of government ownership, it was supposed to deliver the best of both systems.

For nearly 70 years regulation worked reasonably well, but now it is headed for some abrupt changes. On Jan. 1, long distance or "toll" service will be opened to competition, resulting in dramatic increases in telephone rates.

This doesn't sound logical to most people. Competition is supposed to lower costs, not raise them.

The answer, perhaps even less convincing than blaming rate increases on competition, is that rates aren't going up at all. They are just being redistributed. Local rates will rise, but toll rates will fall.

However, modem users will be caught in the middle of the redistribution and hit with a triple whammy.

How rates are set

Telephone rate regulation has always been more the province of politicians than of economists. Rates are set according to the value of the service to the user, which is generally how many telephones a user can call without a toll charge. On this basis, urban rates are higher than rural rates, exactly the inverse of the costs of providing service.

Long ago regulators and telephone companies decided that somehow businesses had to be encouraged to provide local telephone service at less than cost — a polite way of saying they had to subsidize it. The method that evolved is known in the industry as "division of toll revenues." In this process, a portion of the revenue from every toll call goes to the local telephone company.

The Federal Communications Commission (FCC) regulates interstate rates, and the state public utilities commissions regulate intrastate toll calls and local rates. As a result of this regulatory milieu, toll rates have subsidized local rates for many years.

During the 1970s, pressure rose from a new sector. Companies known as "other common carriers," or OCCs, began to emerge. At first, carriers such as MCI and Southern Pacific offered only private line services, but in the mid-1970s, they demanded the right to connect to AT&T's local switching network, so they could provide toll telephone service in competition with AT&T.

AT&T vigorously resisted this encroachment on its monopoly, eventually taking its case to Congress where "the Bell Bill" died in committee. In 1978 the FCC opened long-distance service to competition, and now in most large cities, telephone users have more than one long-distance company to choose from.

The Bell breakup

In 1956, AT&T and the Department of Justice concluded a seven year-long antitrust suit with a consent decree that restricted AT&T to the telephone business.

In 1974, the Department of Justice filed another antitrust suit seeking to break up the Bell System. After seven more years of litigation, in January 1982, AT&T signed another consent decree with the DOJ. Although this decree freed AT&T to compete in data communications markets, it contained several provisions that further ensured a growth in local telephone rates. All Bell companies are required to provide all carriers with exchange access equal to that enjoyed by AT&T. While this opened long distance service to competition, it meant that AT&T's toll revenues could no longer subsidize local rates.

Under an FCC ruling, a consumer who uses no toll service will nevertheless pay a monthly charge for access to the long distance network. Initially, the toll carriers will pay the largest part of the charge, but over a six year period, exchange access charges to the carriers will drop while charges to the users increase.

The carriers' share of the access charges will be in the form of filed tariffs for each line or trunk that con-

Kotay predicted the tariff would have been altered regardless of the planned Jan. 1 breakup. "It was a dinosaur tariff all along. Once it became public knowledge, I think it was doomed in its present form from the very beginning. The fact that the divestiture takes place on Jan. 1 speeded it up a little, however." he said.

The cynic might suggest that all this hoopla was much ado about nothing, that the modem charge, once exposed, was doomed from the start because it was archaic and probably unenforceable.

But it may have proven a point to those who are oriented toward the home use of computers. It may have proven that concerted action on the part of users and user groups can get things done and in a hurry. Some still see it as a form of political action that got results.

But even the cynics must grudgingly admit that there are potholes in the high-tech road that must be explored and repaired as best they can without disturbing the kinetics of this new and still slightly fragile network of communications.

Dave Peyton is a free-lance writer from Huntington, W. Va. His CompuServe User ID is 76703,244.

Dan Connaway

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nects the toll carrier to the local telephone company. Compared to present charges for exchange access, the new tariff rates will be higher, leading to a great deal of controversy over what businesses would be subjected to the charges. According to Robert Preece of the FCC's Policy and Program Planning Division, the intention of the docket was to have all carriers pay the same access charge. This interpretation included data carriers such as Tymnet, which carries CompuServe's traffic. The data carriers petitioned the FCC for a rehearing, and on August 22, were successful in gaining an exemption from the higher access charges. It now appears that the price of CompuServe will be little affected by the FCC's order.

Usage sensitive pricing

In this country, most of us have been able to place as many local calls as desired for one monthly rate. Now, the telephone companies and the regulatory commissions are in general agreement that people should pay according to how much they use the service. The euphemism the regulators and companies apply to measured local telephone service is "usage sensitive pricing."

Even though USP is about as popular as a frog in the punch bowl, the commissions like it because it is a way of ensuring that most people can afford some level of service. USP is already available in most large cities. In many locations it is mandatory for businesses, but most residential users can still opt for flat rate pricing.

With USP, those who use modems stand to be splattered with three barrels of buckshot at once. First, local rates are going up for the reasons just explained. Second, if mandatory USP takes hold, modem users will pay a penalty because of the holding time of many calls. Third, and perhaps most insidious, if attempts to classify all modem users as business spreads, they will pay three or four times the residential rates.

Still, the telephone companies' case does have a certain logic to it, because modem users, on the average, use the service more than most people, (at least those with no teen-agers in the house). It is clear, in any case, that the trend is toward telephone rates based on cost rather than the old value of service concept.

Congress to the rescue?

In the midst of all the controversy over increasing telephone rates, Congress stepped in with bills introduced in both houses in July. These bills would reverse the FCC's access charge decision and continue to subsidize local telephone service with toll revenues.

The future of these bills is highly uncertain. They are opposed by most common carriers and telephone companies, which are certain to be lobbying for their defeat.

So many countervailing forces are at work that the result is impossible to predict. To paraphrase a wag's statement on the economy, it is so complex that only two people thoroughly understand it, and they are unable to agree.

J.H. Green is a free-lance writer from Portland, Ore. His CompuServe User ID is 70007,431.

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ADDING EDITING TO WORD PROCESSING

by Ernest E. Mau

It's almost impossible to buy a microcomputer and not be aware of the advantages of word processing. The power to manipulate text quickly and easily is a principal sales point for many personal and small-business systems, so users quickly discover the joys of word processing for personal letters, business reports, writing assignments, and so on.

Yet a word processor is not a complete writing tool. While it aids in moving blocks of text, creating large documents from smaller bits and pieces, finding and replacing letters or words, and similar tasks, the most tedious chores still require considerable attention and effort.

To find a synonym for a word you've used too often or one not having the exact meaning you want, you have to page through a thesaurus or synonym dictionary, delete the offending word, and type the replacement.

To check and correct spelling errors, you first have to recognize that a word is incorrect. Then you can look it up in a dictionary, delete the error, and type the correction.

Even more work is needed to eliminate common grammatical and style errors. Things like overworked phrases, archaic usages, commonly misused or misunderstood words, and simple punctuation errors can be corrected only if you first realize an error has been made. If you suspect such an error, you must verify and correct it, perhaps going to a suitable reference book to find the rule or replacement and then deleting and correcting from the keyboard once again.

Such editing tasks take time — a great deal of time! For serious writing or word processing beyond short personal letters, the editing can take as long as the original writing. Occasionally, it can take longer.

Yet help is available. Commercial programs are available to expand word processing capabilities so the machine does most of the "grunt" work. By letting the computer do the things it does best, you get more effective output from your investment while freeing time for further creative activities. After all, the whole idea of using a computer is to make your tasks easier.

The remainder of this article examines five commercial software packages that automate much of the editing process. These include an online thesaurus, two spelling proofreaders, and two grammatical or style proofreaders. They certainly aren't the only such packages available, but they illustrate what can be done.

Push-button synonyms

As any writer knows, individual words should not be duplicated too frequently or too close together. Often, a synonym or several synonyms are needed to polish the writing and make it look professional. However, few writers can memorize all the alternatives for words they use habitually and must resort to looking up subjects and principal words in a thesaurus. At best, it devours time and can be "labor intensive."

Imagine how pleasant it would be to touch a button and have those synonyms appear on the screen. Think how much more convenient it would be to zip right to the desired synonym, tap another button, and have a new word pop into the text.

A dream? Hardly! The power to do that is in a software package called *The Random House Electronic Thesaurus* from Dictronics Publishing Inc. Working from a pre-stored "dictionary" that occupies 204K of diskette space, this program provides a thesaurus of 60,000 synonyms for 5,000 of the most used or overused English words. An abridged 80K dictionary for small systems provides about 20,000 synonyms.

Electronic Thesaurus differs from most word-processing enhancements in that it is not tacked on as a post-processor to handle or manipulate finished text files. Instead, it's installed as a modification to the processor itself, creating an operating "environment" for the processor and permitting online access to its functions while writing or editing.

Installation is simple and quickly accomplished. For the version tested, designed for WordStar, it was necessary only to copy the working processor already being used and "modify" it with a single keyboard command and appropriate answers to six fundamental questions. Without having to know anything about the internal workings of the processor or thesaurus programs, this created a new word processor capable of accessing the synonym dictionary and making substitutions under keyboard control.

Using the thesaurus function is simplicity itself. Just use already familiar commands to position the cursor on the word for which a synonym is needed, and tap the ESCape key twice. In less than 10 seconds (3 to 5 seconds was the test average), the text moves down the screen, opening a space at the top in which the thesaurus information appears. If the word being sought is one of 5,000 keywords, the synonyms appear in horizontal rows. The listing even includes identification of the parts of speech so you can choose noun, verb, adjective, adverb, and other forms easily. It does not attempt to group words according to degrees of usage, unlike a conventional book-style thesaurus.

To make the substitution, move the cursor to the chosen word and tap ESCape one more time. Magically, the new word replaces the old one in text. Capitalization is retained, so if the old word began with a capital letter, the new one also begins that way. If you don't want to use a suggested synonym, hit RETURN instead of ESCape, and the cursor returns to text at the point where you entered the thesaurus, without any changes.

When the word being sought is not a keyword provided in the system, that fact is indicated at the top of the screen. The program attempts to make as close a match as possible, indicating nearby keywords as they occur in the thesaurus. If one is reasonably close, like the root of a plural word, the program attempts to pre-position the cursor there. If you like, you can move the cursor to another word more appropriate than the program's guess. In either case, tap the ESCape key once, and the synonyms for the intermediate word appear. Select one by moving the cursor, hit ESCape again, and that word replaces the original in text. However, the endings for things like plurals, "tion" or "ing" suffixes, and similar usages may be lost, so it's necessary to do a little touching up from the keyboard.

It's that simple! Synonyms at the

touch of a button. They're put right into text, so you don't have to spend time typing them and risking keyboard errors during the process.

Another plus! You don't always have to be using the word processor. The synonym program resides on disk and can be called and used directly. Execute the program, type the word you need to check, and the list of synonyms or alternate keywords is provided on the screen, complete with scrolling capabilities to move back and forth through keywords in the general alphabetic vicinity.

All this sounds too good to be true. In some ways it is! The program has limitations. The most obvious and most disturbing is that the thesaurus cannot be expanded or customized. According to the publisher, the indexing technique is too complex to allow user modifications of the keyword and synonym files. They have no plans to make any such faculty available, only to provide optional larger dictionaries. That could and probably will be a problem to writers in specialized fields. For example, technical writers would be unable to develop a technical thesaurus, and would be confined to the generalized words already included. While the existing dictionary may be adequate for many literary endeavors, it won't be as useful to scientific, business, medical, or similar writers.

Another problem is that the thesaurus is not fully cross-indexed. There are 60,000 synonyms, but just 5,000 keywords. Since only keywords can be used to locate synonyms, the search tends to be unidirectional. For example, the program gives "instrument" as a synonym for "tool" and "tool" as a synonym for "instrument." Those are fully cross-indexed and yield a bidirectional search. However, "author" appears as a synonym for "write," but "author" is not a keyword so no substitutions for it are available. In another instance, the program lists "estimated" as one replacement for "approximate." However, looking up "estimate," which is a valid keyword, gets several synonyms but not "approximate." This trait is bothersome, though the degree of annoyance depends on the preferences, vocabulary, and imagination of the person using the program.

A problem possibly unique to WordStar appears when using that processor's "no-edit menu" commands to run a program other than the processor and then return. Usually, such "external" programs can be executed properly and with little trouble. Occasionally, however, the operations fail to complete. This is especially noticeable with external spelling proofreaders, and the whole computer system has locked up in the middle of a spelling check. Apparently there are some memory conflicts occurring when the word processor isn't exited completely, so the simplest solution is to not use WordStar's "run program" feature unnecessarily. Since that may limit certain needed operations, users experiencing such troubles might wish to use an unmodified processor without the thesaurus for writing and initial editing, switching to the modified processor with thesaurus functions for a final pass after other tasks are completed.

A few other small bugs were observed. One was that the thesaurus won't look up a word enclosed in quotation marks.

Another slight difficulty occurs when using margins wide enough for lines to extend beyond the right edge of the screen. You would have to scroll horizontally to see the end of the line. If only part of a word appears at the right edge, the thesaurus function won't look for the invisible part and tries to match only the letters showing so the keyword being sought is not the actual word in text. The opposite is true after scrolling when only part of the word is visible at the left margin. There, the thesaurus function does identify the start of the word and searches properly.

In spite of its shortcomings and somewhat restricted applications for specialized writers, *The Random House Electronic Thesaurus* can be a valuable tool. Retailing at $150, it gives good value for the price, and it does prove a usable and practical editing aid if the user remembers its limitations and applies it correctly.

The Random House Electronic Thesaurus is or soon will be available for numerous computers and word processors. The version tested was run on a 64K CP/M-based computer with double-sided double-density eight-inch drives and using WordStar. The system requires 57K of RAM for the thesaurus to function. It's also compatible with CP/M-equivalent operating systems like SDOS and TURBODOS. Different versions accommodate the IBM-PC, Apple II (with CP/M), TRS-80, and other machines. In addition, versions will be available for word processors such as PeachText, Scripsit, EasyWriter, and so on.

Spelling proofreaders

Spelling proofreaders come in a bewildering array of types and with widely differing capabilities. Some are good, while others are so limited they can cause more problems than they cure.

The fundamental function of a proofreader is to identify words that may be spelled wrong. Sometimes, the writer makes an actual spelling mistake, other times it's a "typo." Checking for such errors is tedious and not always accurate. People who write a great deal usually find that they miss errors no matter how many times they go back and read the material.

Proofreading programs don't suffer the failings of a human reader. They are extremely literal. They never get tired or bleary eyed. They don't try to anticipate what should be on the page or read what they remember having intended to put on the page. Instead, they take words and compare them individually to data stored on a magnetic diskette. If the word from text matches one in the dictionary, it's assumed to be correct. If it does not match, it is questionable. Notice that a good spelling proofreader doesn't assume a word is misspelled just because it's not in the dictionary. It may be correct, but not yet part of the program's vocabulary. It may be a proper name the writer doesn't want in the dictionary.

For each questionable word, the program then must allow the human operator to choose among various options. Should it become part of the dictionary? Should it be ignored? Is it unique to the one document and therefore acceptable for that document only? Is it really wrong, and should it be changed?

Most popular proofreaders do an acceptable job of checking words against one or more dictionaries. They differ somewhat in speed, but the majority accurately pinpoint spelling and typographical problems. The big differences are the special features provided to expedite their use in making corrections. Some merely mark possible errors, making the user locate and correct them with a word processor. A few others make corrections immediately. Some only list the possible errors in alphabetical order, while others show them in context.

As a full-time writer, I'm always seeking better speed and higher reliability. Therefore, I devised a list of the principal features I need in checking spellings. Among the items are:

1. Detected errors should be shown in context. A simple listing of words usually is inadequate because there's no indication of how words were used, and usage may affect the spelling or choice of a replacement.
2. The proofreader should have "dictionary lookup" to check the spelling of keyboard entries or flagged words. This makes it easier to locate possible corrections of just a letter or two without having to resort to a book-style dictionary.
3. Corrections should be made interactively while using the proofreader. It's a nuisance to return to the word processor to locate and manually correct marked errors. Far better to have the proofreader replace an error with a new word then and there.
4. Where interactive correction is possible, the corrected word should be checked against the dictionary to assure it's not misspelled. It's amazingly easy to erroneously type a correction, and such mistakes should be intercepted automatically.
5. The dictionary on disk should be structured so updates, expansions, and corrections are easy. Adding new words should not require much effort. Deletions should be allowed so that an improperly spelled word accidentally entered can be extracted.
6. There should be some allowance for creating individual, customized dictionaries suitable for different applications. For example, a technical writer might want to use one dictionary for general electronic terms, another for computer-specific terms, and still others for different subjects.
7. Dictionary comparisons should be literal. That is, words should match one for one. That's more accurate than having a dictionary that contains only root words and then constructs prefixes, suffixes, and endings from grammatical rules. The latter type uses a building-block technique to minimize disk storage space, but the erratic rules of English are unreliable and allow too many errors to sneak past.

Those are tough conditions, especially in combination. In fact, I've found only two programs that approach satisfying them, namely Oasis Systems' *The Word Plus* and Aspen Software's *The Random House Proofreader.* There may be others, but these two are highly visible among packages that operate on CP/M systems.

Oasis Systems' *The Word Plus*

The Word Plus is a capable proofreader that includes automatic correction as its principal feature. It can work from up to three dictionaries at a time. The "main" dictionary is static, meaning the user cannot change it. However, an "update" dictionary can be maintained by the user, adding new words, deleting old words, and so on. Then there may be a series of "special" dictionaries that can be set up on individual topics. In any one pass, both the main and update dictionaries are used. The user may specify one additional special dictionary per pass. Therefore, switching from writing a piece on electronics to one on mining would only require naming a different special dictionary at the start of the operation.

The system is provided with a 45,000 word main dictionary. Working from some standard word lists of my own, I've built the system up to 93,000 words among the main, update, and special dictionaries.

Words flagged as questionable may be added to either the update or special dictionaries, depending on a keystroke. Therefore, a general word likely to be encountered in many places may be directed to a dictionary always checked, while a subject-specific word may be directed to the dictionary called only for that topic.

Proofreading is fast and accurate, using the one-to-one comparison technique. Dictionaries are maintained with complete words — no suffix or prefix stripping. With the capability of reading 10,000 words of text every two minutes, it goes through an entire book chapter or short manual quickly. When the computerized check completes, the user goes through the words one at a time, giving the appropriate instructions about what should be done. Nothing in the document is changed until all words have been examined and instructions given for each. There's even a provision for backing up through the list to change some instruction entered earlier, so improperly marking a word need not damage a dictionary or the text.

Normally, unknown words are not shown in context, but just listed one after another in alphabetical order. However, there is an option to use a "context file" that keeps track of word locations. If that file has been specified, a keystroke automatically displays the portion of text that contains the possible error. On the other hand, failing to specify the context file during program startup and leaving out of the configuration file makes it impossible to verify word usage in the document.

When a word requires a correction, the change is entered at the keyboard and automatically is incorporated into the document when all instructions for all words have been issued. One option is to look up the word in the dictionary. If a correct spelling is found, it can be inserted directly into the text corrections without retyping. Otherwise, it's necessary to type the entire word.

There are a few problems here. First, a typed correction is not checked against the dictionary, so it's possible to replace one error with yet another.

Second, words that change length are not marked in any way. When the program completes, the user is informed that words have changed length so WordStar users can go back and reform paragraphs to adjust the margins. However, there's no indication within the document to show where those changes occurred, so there's no easy way to identify which paragraphs need reforming. Hence, it's necessary to reform most or all text, which isn't particularly desirable for long items like book chapters, manual sections, and similar works.

Third, when "viewing" in context is requested, the possible errors still are presented in alphabetical order. Therefore, the sections of text displayed tend to jump all around the document, making it difficult to follow the flow or thread of the original text.

For instance, the first error may display lines somewhere near the end of the document when viewed, while the next error may display lines at the beginning. It takes some time to feel comfortable with context viewing and the non-continuity thereof.

The system has numerous other options. The ability to mark words without correcting them is useful if you are "batching documents" and want to come back later to make the corrections. Others include using the printer for hard-copy listings of misspelled words, creating a disk file of errors, ignoring things between backslash characters (formatter commands in Magic Wand), and others.

Some users also might be interested in "peripheral programs" furnished by Oasis Systems on the same diskette. One is a hyphenation program that inserts "soft" hyphens in words exceeding a specified length. A soft hyphen prints only if it occurs at the end of a line; otherwise, it's ignored. This program works from a set of hyphenation rules — an algorithm — combined with an "exceptions" file that identifies words not following the rules. While the exceptions file can be customized by the user, the program isn't as useful as might be desired. For one thing, it won't hyphenate short words, and even many of the long ones aren't broken. All it seems to accomplish is adding a bunch of extra characters to the text file and increasing the file size on disk. Most of the hyphens don't fall at line breaks anyway, so you get a file that's difficult to read on screen, but not much closer to the right margin than if you'd left it alone.

There's also no manual control over the hyphenation, so the program may choose to hyphenate between the fourth and fifth syllables, at a point beyond the margin, forcing the whole word to the next line.

A lookup program allows any word to be typed at the keyboard, and it tries to locate the correct spelling or some close alternatives. As a stand-alone program, this seems less than useful because not many people are going to leave a task underway just to run the lookup program and find out how to spell one word. It's probably faster and more convenient to go to a printed dictionary. If this were an "environment" for the word processor, similar to that used by *The Electronic Thesaurus* and providing on-line spelling help while writing, it would have much greater value.

A word-frequency program is provided to analyze the usage of words in a document. It shows the number of times each word is used, giving some feeling for whether certain words have been overused. It's also handy for checking whether a long word, say with six syllables, might have been used too often and thereby affects the "readability" level of the work. Reports are tabulated either according to frequency of use or alphabetic word sequence, and they may be stored as disk files.

Two other programs in the package get less use. One called "FIND" allows an ambiguous letter pattern to be typed, with question marks representing unknown letters. The program then searches for all words having that length and the known letters in the specified position. For example, entering "???ING" would provide a list of all six-letter words in the dictionary ending in "ING." It might be great for solving word puzzles, but isn't highly practical for most word processing. The "ANAGRAM" program takes jumbled letters and attempts to find a valid word that simply unscrambles them. Again, it's interesting as a novelty item, but not of any real importance in normal writing or word processing.

One final feature is of some value. It's a "homonym finder" that locates words that might give trouble because of identical sounding words having different meanings and different spellings. By manipulating the special dictionary to include only those words normally causing trouble, a user gains a highly specialized and possibly useful editing function.

The Word Plus operates with most CP/M-based word processors, so it's not limited to WordStar applications. The necessary customizing for each processor is accomplished quickly and easily. The advertised retail price is $150, and the package may be obtained through many computer dealers or directly from Oasis Systems.

Aspen Software's *The Random House Proofreader*

The Random House Proofreader is such a close match to the requirements set forth earlier that one might think those "specs" were written after seeing the program package.

Once again, this package is intended for use with CP/M-based word processors, although a version also is available for the IBM Personal Computer and the processors running on that machine. The setup or installation is easy, running a single program and answering just a few questions about the soft-hyphen character used by the processor, the method of conducting automatic correction, and whether to chain from the spelling proofreader to a grammatical or style proofreader.

Proofreader works from two dictionaries, namely the main and auxiliary dictionaries. The program arrives with a main dictionary of about 50,000 words, and an auxiliary dictionary containing the "dot commands" to be accepted without question under WordStar. After some six months of use and testing, I have over 100,000 words in the main dictionary and another 20,000 words in several auxiliaries.

Once again, proofreading is extremely simple. After entering a command line that specifies the name of the file to be read, the program reads the text file and a count of total words and the "unique" words appears on the screen. The program then reads the main and auxiliary dictionaries and displays the number of "unknown" words for which there were no matches. At that time, one of six options may be selected from a menu.

One option merely displays the unknown words — a quick operation where the screen just fills with the unknowns at several words to a line. It provides a fast check of the words without making any changes or marks in the document, and it may be followed by any other menu choice.

Another is to review the words. Here, the unknowns are displayed one after another in alphabetical order and without being shown in context. The user is asked whether the spelling is correct or incorrect. This is a fast way of eliminating things like proper names that are spelled correctly but aren't desired in a dictionary. The user must realize that saying a word is correct during review also precludes adding it to the dictionary during proofreading. Therefore, if a word is spelled correctly but should be added to the vocabulary, this review pass should show it as incorrect — it then will come up during the correction phase where it can be "learned."

There are three correction options. One is to simply "mark" the words, which is compatible with the way many other proofreaders function. Here, the last letter of each questionable word is changed to a pound symbol ("#") so the word processor can be used to locate and change the entries under manual control. There is no further operator interaction, and marking of all occurrences of all unknown words takes place without any individual questions. Though useful when dealing with right-justified text because it doesn't alter any margins, this option requires the most work when returning to the word processor.

A standard "correct" option is ideal for processors other than WordStar. Here, each unknown word is shown in context, and the user is given several choices about what should be done with it. A "WordStar mode" is similar and offers the same disposition options, but handles the text entries differently. In both, an available action is to correct the word on the spot. Under the non-WordStar method, the error in text is replaced immediately, and no marks are left in the document. Under the WordStar mode, the correction also is made, but any that change length and are either longer or shorter than the original are marked with a pound symbol ("#"). Notably, the marking character here does not replace or alter any letters of the word, so it's not necessary to go back and change any letters.

When working with WordStar files, marking only words that change length allows fast scanning with the processor to locate the marks, delete them, and reform the paragraphs as necessary. Because of WordStar's unusual way of handling paragraph forming, this feature is important to fit text as closely as possible to the right margin. This marking of corrections that change length is a feature already cited as missing from Oasis Systems' *The Word Plus*.

Both standard and WordStar correction modes are fully interactive. That is, the questionable word is identified, displayed in context, and accompanied with a menu of choices for subsequent action. Among the possible actions are ignoring the word one time only or accepting the word as correct throughout the document. Neither of those change the text or add to the dictionary. The word also can be looked up in the dictionary. Since it's already identified as an unknown, a group of alphabetically close words is displayed in attempt to bracket an appropriate root or similar word.

If the word is correctly spelled, a single keystroke "learns" it and adds it to the auxiliary dictionary. That dictionary is updated automatically at the end of the proofreading session. If the word is not correct, a different keystroke tells the system to make a correction. The user is asked to type a replacement word (or words), after which the program attempts to locate the replacement in the dictionary. If the typed entry isn't a known word, new options are presented, including accepting the replacement as typed, obtaining more dictionary help, or reentering a new word.

The Random House Proofreader has some other interesting features. Unlike *The Word Plus*, errors are displayed in the order they occur, not in alphabetical order. That means one can follow the continuity of the document as the words are displayed in context. There's also an option when initially installing the system to control the way second and subsequent occurrences of the same unknown word are handled. One option is to make all additional corrections without any intervention, but this may cause problems with capitalization. For example, the first misspelling of "the" may be a "tje" in the middle of a sentence and containing no capitals. The next may be a "Tje" at the beginning of a sentence, but fully automated replacement would use the prior "tje" without the capital.

Alternatively, the program may be set up for interactive functions at each occurrence. Here, each subsequent occurrence causes a prompt that identifies the previous correction and asks whether to use it as typed or to accept a new entry. Usually, this is the preferred mode, simply because changes in capitalization can be accommodated as they occur.

Dictionary maintenance causes few problems. The auxiliary dictionary is updated automatically at the end of each proofreading session, so it's always current. It's also maintained in ASCII text form, so it can be edited with the word processor. The main dictionary is in a compressed form and cannot be edited directly. Since the only words that can be looked up are those in the main dictionary, it's occasionally necessary to update it with a program provided. That program takes the words from the auxiliary dictionary and merges them into the main one; it should be run when there are about 400 new words in the auxiliary. It has the ability to add or delete words, so if a stray misspelling manages to get into the main dictionary, it can be deleted.

Apostrophes are handled correctly, if the words containing them are properly placed into the dictionaries. This means possessive nouns, verb contractions, and similar forms can be incorporated and correctly identified by the program.

The one problem noted was that normally hyphenated words occurring at the ends of lines aren't recognized as they should be. When one occurs at the end of a line, *The Random House Proofreader* marks the first part as questionable even if it is a valid word. The program attempts to show the hyphen, return, linefeed sequence, displaying something like "two-__" on the screen. The presence of those last two characters is the indication that it's a word with a hard hyphen and not a normal mismatch to the dictionary. Usually, it's best to proofread before hyphenating words for paragraph forming. That way, it's only necessary to deal with the "hard" hyphens of normally hyphenated words.

The Random House Proofreader is a delight to use. Although it lacks the special add-ons of *The Word Plus* for hyphenation, homonyms, anagrams, and so on, it probably has the edge in convenience and speed of editing. At a retail price of only $50 (recently reduced from an early price of $129), it's well worth a try by even those who already are using other proofreaders. Don't let the low cost fool you! This is one of those rare items where the low cost doesn't mean a lack of quality or support. It works admirably with most CP/M and IBM PC word processing packages.

Grammar and style proofreaders

Where spelling proofreaders simplify the identification and correction of misspelled words, grammar and style proofreaders do the same for phrasing, punctuation, and other common errors that plague most writers.

For CP/M-based systems, two packages demonstrate these functions. The first, is *Grammatik* from Aspen Software Co., and the second is *Punctuation & Style* from Oasis Systems Inc. Both are admirable aids for any serious writer, though they differ significantly in the details of their operations.

Aspen Software's *Grammatik*

When first introduced in 1981, *Grammatik* caused a stir in the word-processing community. Suddenly, there was a way to identify common errors of style, thereby smoothing and polishing virtually any type of writing.

Grammatik seeks to reduce or eliminate two categories of errors, namely typographical errors and errors in style resulting from a poor choice of wording or phrasing. In the first case, it easily identifies such things as repeated words and punctuation. For example, a common typing mistake is to end one line with "the" and begin the next line with another "the." That's also a hard error to spot when proofreading, but *Grammatik* catches it every time. Another is doubled punctuation, such as a ";;" often resulting from typing a little too fast for the word processor. Yet another is inconsistent capitalization such as "THe" where the shift key didn't release quickly enough. Again, the program looks for such inconsistencies and challenges the writer.

The English language contains many pitfalls such as archaic words no longer in common use, awkward phrasing, informal words unsuitable for some types of writing, overworked or trite expressions to be avoided, redundant expressions, etc. Given a good dictionary of such problems, *Grammatik* locates them, identifies the type of error, and, at the user's option, marks them for later correction.

Notice that I said "given a good dictionary." The program relies on a disk file that contains the erroneous words or phrases, an identification of the type of error, and suggested changes. That dictionary is a text file that can be edited with most word processors, allowing the user to customize the proofreading to his or her needs. A dictionary of approximately 500 words and phrases is provided with the program, but I found it marginal — it simply didn't contain definitions of the errors I make most often. The first step then was to revise it. When I had finished, I had over 1,000 words and phrases and had obtained a solid, workable foundation for the proofing.

A simple installation procedure creates a "configuration file" on disk to tell the program which of several possible dictionaries to use, display or not display specific error categories, mark or not mark an output file, show or not show suggested changes, and so on.

Once the configuration file exists, all that's necessary is to enter a command line from the keyboard to run the program against a named text file. The contents of the text file then scroll on the display screen. When an error is encountered, scrolling stops, the error is identified, and any suggested changes in the dictionary are displayed. The user then has the option of marking the error, ignoring or not marking it, or quitting the read-through entirely. If the instruction is to ignore an error, text scrolling resumes until the next error is found. If marked, the output file will have a coded entry immediately following the error, thereby providing a locatable character for a word-processing "search" operation and an identification of the type of error made.

Grammatik does not insert any of the suggestions into the text file. The user therefore must either remember what the suggestions were when going back with the word processor, or utilize the program option to output the error and suggestion to a printer for reference.

When the proofreading pass completes, *Grammatik* provides a summary of the document structure. Included are information on the number of sentences read, number of words in the document, average sentence length, average word length, number of short or long sentences, and so on. It even tabulates the number of questions and imperatives (question marks and exclamation points), forms of "to be," and prepositions, as well as several user categories.

The software package also is provided with a dictionary of sexist terms that can be run simultaneously with the primary phrase dictionary for those users who need to eliminate sexist terms.

In all, the program identifies 18 error categories, with some being serious while others are matters of personal taste. Other error types can be defined by the user as needed for his or her specific style of writing.

As good as all this sounds, there are a few problems of which prospective users should be aware. First, there's an upper limit to the number of words and phrases that can be used. These are loaded into memory, so it's a restriction of the hardware.

The program has no memory of what you've told it to do with a specific error, and it does not provide any way to set up exceptions to the rules. For example, I may use "WordStar" many times in an article, but I cannot tell *Grammatik* that it's acceptable to have the uppercase "S." Therefore, the program stops and challenges every occurrence of "WordStar." That can get annoying — very annoying — and Aspen Software is aware of the problem. A future release is planned to allow for such exceptions to the normal rules.

Running under WordStar, almost all text files begin with a set of "dot commands" as instructions to the processor. *Grammatik* tends to view those dot commands as sentences. While it never has indicated an error in one, the usage summary at the end of the pass is affected. In any document beginning with a dot command, the shortest sentence is always shown to be the first sentence and having a zero length. The average sentence length also is affected and isn't a true indication, though it's still possible to judge differences between documents.

A warning! This software package is addictive! When I first started using *Grammatik* more than a year ago, I had serious doubts about how effective it would be. However, after I'd revised the dictionary to my own needs, I found it extraordinarily helpful. Not only did it speed my proofreading chores and take away most of the drudgery, but it changed my writing style. I dislike triggering errors, so I now write to avoid them. My choices of wording and phrasing have improved, and I'm much more critical of my own work.

Grammatik originally sold for $149, but, like Aspen Software's *Proofreader*, it's recently been reduced and now sells for $75. It's compatible with most CP/M-based word processors, requiring only that the processor use a conventional text file for disk storage. While no minimum memory is specifically cited in the manual, the fact that the phrase dictionary is stored in memory means that large memories give better results than small ones.

Oasis Systems' *Punctuation & Style*

Using *Punctuation & Style* is much like running an enhanced version of *Grammatik* because they have the same objective and similar means of reaching that objective. Because Oasis Systems' programs are newer than Aspen Software's, they have an edge in versatility and the number of available features.

This system consists of two main programs called *Cleanup* and *Phrase*. They are run independently and for different purposes. *Cleanup* is the program that takes care of punctuation problems, identifying 25 distinct errors. It searches for mixed uppercase and lowercase letters in words, missing capitals at the beginning of sentences, excess punctuation, repeated words, formatting of dashes and ellipses, the presence of two spaces at the end of a sentence, and others.

When run on a text file, *Cleanup* offers numerous options set by "flags" typed into the command line. Among the options are the marking character embedded at errors, whether an output file is generated, whether messages or annotations are inserted in text, and whether the program runs interactively or "quietly." The latter option is interesting. In the quiet mode, the program merely locates and identifies errors, putting marks and, if selected, annotations in the text file. In the interactive mode, the program stops at each error and asks for disposition instructions to ignore or mark for later change.

In either case, the cleaned text file is run back through the word processor where a search or search and replace command locates the error marks. By glancing at nonprinting comment lines added below the paragraph, the user can identify the type of error or errors made, and thereby know how to deal with them.

With just a few exceptions, this punctuation proofreading works well. However, there are a few minor points that are bothersome. One is that an error often is detected where an abbreviation ends a sentence. Even though the abbreviation is in a special file set up to keep track of such things, it's common to find the program saying that an "etc." at the end of a sentence isn't correct.

Another problem is that the program expects ellipsis points to be separated by spaces. That can be trouble! Word processors use spaces as "delimiters" and will break a line at any space occurring at or just before the right margin. If that's a space between the ellipsis points, it results in one or two points at the end of a line and the remaining point or points on the next line. This is especially undesirable with WordStar because a period in the first column indicates a comment line that isn't printed. Such splitting of an ellipsis could cause lost lines at printout. However, there's an easy fix if the word processor has something called a "nonbreak space." That special character prints like a space, but cannot be split, expanded, or otherwise modified. Putting nonbreak spaces between ellipsis points allows the cleanup program to function properly while preventing split points, but it does require a change in typing habits.

Another difficulty is that the program expects numbers to be formatted to conventional style. That is, no commas to the right of a decimal point, and commas every three digits to the left of the decimal. Fine for conventional numbering, but not right for international metrics. Technical types having to deal with metrics often get involved with numbers where four digits have no comma or separator at all (only five or more digits require separation). Furthermore, the standard is for trios of digits to be separated by spaces, not commas. Those types of numbers aren't acceptable to the cleanup program and are indicated as errors.

On the positive side, the program uses an exceptions file for capitalization, thereby enabling a user to specify words that are not errors even though they contain letters of mixed case. So, by putting "WordStar" in the exceptions file, it is not detected as an error and vastly speeds proofreading a document containing many such references.

Another plus is that unbalanced punctuation marks like parentheses, brackets, braces, and quotation marks are shown at the paragraph where the mismatch occurs. In contrast, *Grammatik* only indicates an imbalance at the end of the proofing, making it difficult to locate the omission.

It's also worth noting that any error category or combination of error categories can be switched off by changing a configuration file. Furthermore, special markings in text can be used to set aside "unchecked" areas that aren't to be proofed. Often, tabular data would register many errors because of the spaces between columns, so the entire area can be set off between marks and not proofed.

The other half of the *Punctuation & Style* package is the *Phrase* program. This is similar to *Grammatik*, using a phrase dictionary that can be altered, expanded, or reduced by the user. Again, my first step was to expand the dictionary, more than doubling its size from about 500 entries to more than 1,100.

Unless being run in the quiet mode where errors are marked without user intervention, the program displays the portion of text containing what has been identified as a possible error. The error itself is set off in brackets (or other specified characters) and is separately identified with any suggested changes that were in the dictionary. The user can choose to ignore the error or mark it. If marked, the new text file will have the area enclosed in brackets, just as it appeared on the screen.

This program also is capable of inserting nonprinting comment lines in the text to identify the error and suggested remedy. But it does so only if a flag is set at the start of the program run. At that, the flag must specify whether the comments are to occur at the end of the affected sentence or at the end of the paragraph. Putting them at sentence ends seems less than desirable because they are difficult to remove — failure to remove one might result in it not being treated as a comment (the dot isn't always at the margin) and printed. On the other hand, putting the comments after the paragraph only works correctly if there is a blank line separating the paragraphs. Where blank line separators aren't used, the program doesn't detect the end of a paragraph, and the inserted comment may wind up at the bottom of a page or several pages beyond.

There is no provision for identifying the type of error, unlike *Grammatik*. Therefore, one doesn't always know

Continued on page 48

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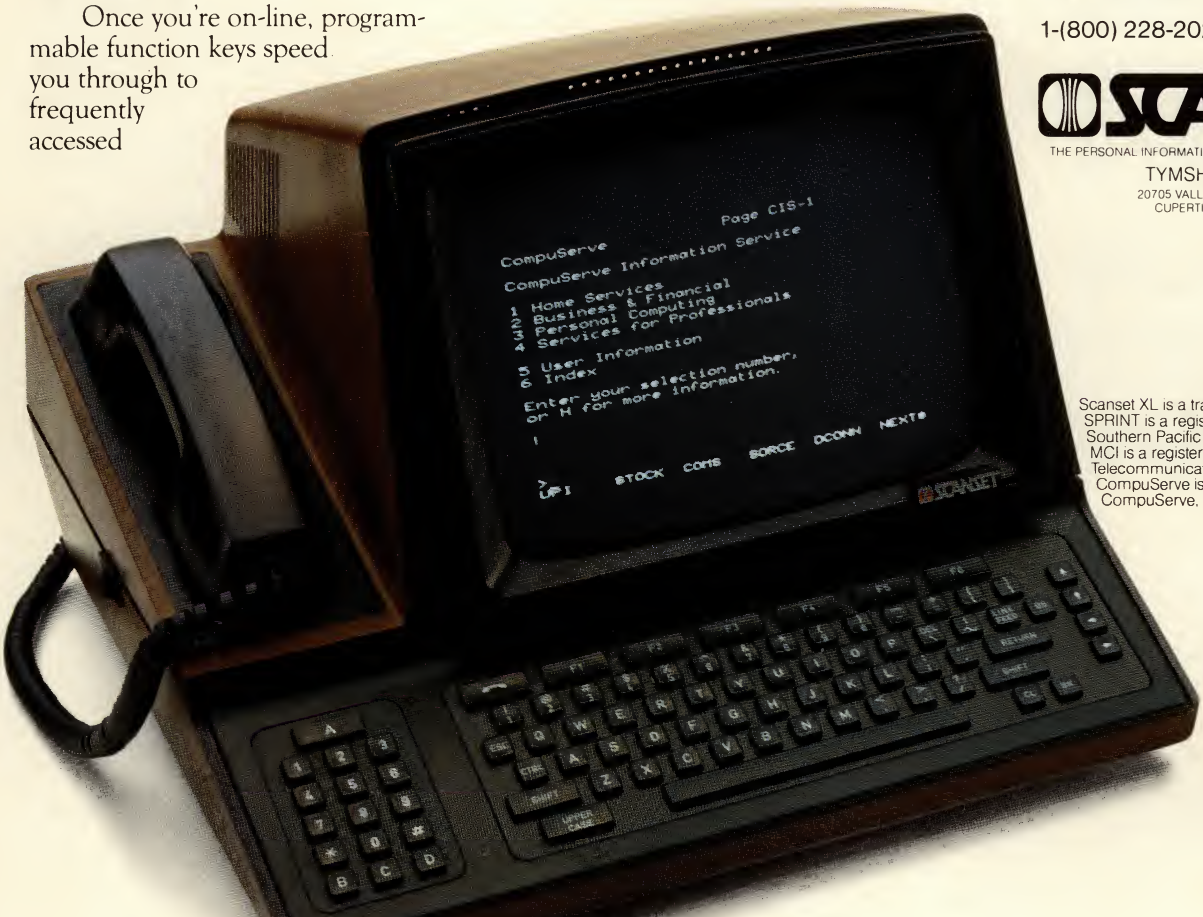

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CompuServe                    Page CIS-1

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2 Business & Financial
3 Personal Computing
4 Services for Professionals

5 User Information
6 Index

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COMPUTING ACROSS AMERICA WITH STEVEN K. ROBERTS

Chapter 2:

CRUISING THE HOOSIER STATE

There is no conversational door-opener more potent than cruising into town on a bizarre recumbent bicycle equipped with solar panels, extracting a Model 100 computer from the luggage rack, and hooking up to a pay phone via the acoustic coupler.

"You with NASA?" asked a farmer in eastern Indiana, climbing out of his dusty pickup truck after a morning's harvest. "How d'ya steer that thing? What's that yer typin' on?"

I have become an agent of future shock.

That's a rather entertaining role to play if you happen, like me, to be a flagrant extrovert. Starting a conversation involves nothing more than gliding up on the bike and waiting for the inevitable questions. Or perhaps pulling the Model 100 out of the briefcase in a restaurant and tapping on the keyboard until food arrives.

This trip seems to have captured the imagination of the public. The curiosity and acceptance I've received have been quite a boon. After a 55-mile death march into a brutal headwind, I arrived in Bloomington, Ind., exhausted and hungry. I stopped in a little restaurant called the Runcible Spoon, and within moments I found myself in animated conversation with a scuba diving instructor from Indiana University.

He handed me a key to his apartment and told me where to find towels and a modular phone jack. As the evening progressed, I garnered more and more invitations until the question of where to stay became not one of circumstance but of choice.

Of course, it is the technology that triggers the initial interest — this outlandish blue machine whirring through the streets of Bloomington with lights ablaze (including a xenon strobe atop the antenna) is a sight curious enough to stop passersby in their tracks. Add to this the fact that on a bicycle I am non-threatening. Perhaps a harmless eccentric, but certainly trustworthy. The same technology appended to a motorcycle would net little more than suspicion.

But the real fascination with this escapade stems, I suspect, not so much from the magic of the technology — everyone has at least *heard* of micros, tiny cassette recorders, solar panels, and so on. Instead, it is the fact that someone has actually woven all this into his lifestyle. My "Winnebiko" is not a trade show exhibit or a deliberate attempt to celebrate future technology; it is a functional office-on-a bicycle, and it works.

It works very well. One of my original fears about the trip has been thus far unfounded: The equipment is holding up perfectly.

My legs still work reasonably well, and the bike has suffered only a flat tire and broken kickstand to date.

The Model 100 is a fine little machine, and has so far stood up to spilled candle wax, extended vibration, and heat.

CompuServe unfailingly responds with that familiar "Host Name" prompt no matter what burg I happen to be dialing from — although it would be nice if every town had a node so that long distance charges could be held to a reasonable level.

Together, CompuServe and the Model 100 are indispensable. Besides being used as business tools, they act as a notepad, an address book, a mailbox, a calculator, a scheduler, and more. Today, the machine reminded me to send a thank-you note to the family I stayed with in Indianapolis. A file in my CompuServe work area holds the names and addresses of hundreds of people who have invited me to visit, and the issuing of a simple command will tell me who and where they are.

In short, this works, and that is the message that is being implicitly communicated to most of the people I meet. One lady I chatted with the other day observed, "Gosh, I had no idea this was possible. Last I heard, you had to be a math wizard or something . . ."

Steve Roberts is currently living on his bicycle and is checking into the system daily. He appears on CB (as Wordy) when he's in a node city, and is publishing a more current account of his adventures in a CompuServe database (GO CAA for details).

If you would like to contact Steve Roberts, his CompuServe User ID is 70007,362.

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THE HIGH-SPEED CP/M APPLE: A 6MHz Z-80 Board and a 128K Soft Disk

Appli-Card from:
Personal Computer Products Inc.
16776 Bernardo Center Drive
San Diego, CA 92128
(619) 485-8411
List Price: $375

128KDE Soft Disk from:
Legend Industries Ltd.
2220 Scott Lake Road
Pontiac, MI 45054
(313) 674-0953

List Price: $650

Reviewed by Ernest E. Mau

A question! How does one rig an Apple II to use the popular CP/M operating system while achieving the best possible program execution times? One way is to combine a high-speed Z-80 co-processor board with a RAM-based disk emulator. That's what I've done by installing a 6MHz Appli-Card from Personal Computer Products Inc. (PCPI), and a 128KDE Soft Disk with CP/M Fast Disk software from Legend Industries Ltd.

Briefly, the Appli-Card provides a Z-80 microprocessor and its own memory. Operating at 6MHz, it's speed surpasses Z-80 plug-ins from other companies, most of which don't seem to exceed 2MHz. Since it's so fast, it must use its own 64K (or larger) memory. The Legend Soft Disk is supplied with 128K of memory, plugs into any slot in the Apple, and can be used with Apple DOS, Apple Pascal, or CP/M.

Plunging into the good news, the approach works. Significant improvements in program speed were observed in comparative tests against what I'll call a "Slow CP/M Card." That's a generic name encompassing several well-known Z-80 co-processors.

An initial test compared only the Appli-Card and a Slow CP/M Card, without the Soft Disk. Running a command program compiled from a BASIC program, the slow card completed the run in 103.9 seconds. With the same program, data, and results, the Appli-Card finished in 36.3 seconds. That's a savings of 67.6 seconds, indicating that the slow card ran about 2.8 times slower. If that program repeated continuously for 24 hours, which it sometimes does, the slow card would complete approximately 830 passes, while the Appli-Card would complete about 2,380 passes. I'd say that's significant!

As a preliminary test of the Soft Disk, the Appli-Card was used, and the same compiled 18K program was loaded from disk. The load time from a standard Apple Disk II drive averaged 8.8 seconds, while the time from the Soft Disk averaged only 2.8 seconds. It took 3.1 times longer to load from the conventional disk drive. There's an obvious speedup, but it can't be related to program iterations or time savings on a daily basis because of variations in the disk usage.

Table 1 shows the results of copying a full disk of files (126K) using the CP/M PIP.COM utility program. Times with both the Appli-Card and the Slow CP/M Card are shown for both non-verified and verified copies. For example, the command PIP B: = A:*.* copies all files without verification, while PIP B: = A:*.*[V] is a slower but more reliable verified copy of all files. The Appli-Card showed little effect here, but the Soft Disk made a difference. Non-verified copies took 2.2 to 2.3 times longer with the conventional drive, while verified copies took 3.1 to 3.5 times longer.

Table 1

Disk Copy Times Using the PIP.COM Utility

	ELAPSED TIME IN SECONDS	
TYPE OF COPY	SLOW CP/M CARD	PCPI APPLI-CARD
Non-verified to standard drive	138.3	140.0
Non-verified to Soft Disk	61.6	60.2
Verified to standard drive	259.9	255.0
Verified to Soft Disk	83.5	73.3

However, the Soft Disk is "volatile" and its contents are lost during power interruptions. Therefore, critical files should not be held long in this memory, but transferred to diskettes frequently. Furthermore, "installation" of the Soft Disk requires a DOS modification. Since most commercial programs for the Apple are copy protected and provide their own versions of DOS, those programs cannot access the disk emulation functions. In short, the Soft Disk is useless with most word processors, database managers, and other off-the-shelf software. It's great for those who do their own programming, but it may not be suitable for people relying on purchased software.

The Appli-Card may be more of a problem. This is an "applications oriented" product, often bundled with specific software like a word processor. In that context, it works well since the software already has been patched to use the card. Venturing into other software causes difficulties, however.

The Appli-Card doesn't use a CP/M BIOS (Basic I/O System) in the normal sense. Instead, it uses customized "drivers" installed as needed by the user. In fact, PCPI representatives make a point of saying that it's unnecessary to change the BIOS every time the equipment configuration changes. I find their approach with drivers the biggest hurdle in using their card. A conventional BIOS usually is installed just once during the life of a computer — in five years of using multiple systems, I've yet to rewrite a BIOS and have used those provided with the computers regardless of configuration changes. With the Appli-Card, it seems nearly every piece of software requires some new driver, imposing inconvenience, possible added costs, delays in getting the program operational, and corresponding losses of productive computer time.

For example, the system doesn't like communications programs. Every one I've tried so far has failed, always with an error message telling me that there's no interface card while I'm staring right at an installed card that just worked with another Z-80 co-processor.

For the Soft Disk, I've had to go to Legend Industries twice for a suitable Appli-Card driver and have to go back at least once more. The first driver failed completely. The second runs everything but BASIC programs, refusing to allow any BASIC program to complete with any of several interpreters available. I have been informed that there's a new Soft Disk driver available, and that it should correct the problem.

Table 2 shows the results of another test using one of my own programs compiled to a command program from the original BASIC. The test is divided into one part that's computation intensive and requires only brief disk accesses and another part that's disk intensive. In each run, the same operations and computations were performed on identical data. As expected, the slowest combination was the Slow CP/M Card with a standard drive, and the fastest was the Appli-Card with the Soft Disk — by a factor of 2.52 for the computation section and 3.49 for the disk-intensive section.

Table 2

Comparative Program Execution Times

	ELAPSED TIME IN SECONDS	
Z-80 CARD AND DISK CONFIGURATION	**COMPUTATIONS**	**DISK-INTENSIVE**
Slow CP/M with standard drive	833.0	61.0
Appli-Card with standard drive	414.5	40.7
Slow CP/M with Soft Disk	754.8	38.4
Appli-Card with Soft Disk	329.3	17.5

There's no question that the Appli-Card and Soft Disk achieved what I set out to do. The speed gains are significant, especially to serious CP/M users who tend to seek the fastest program executions and most efficient computer utilization possible.

On the other hand, these plug-ins are not free from problems. Like anything else, they have their faults. First, consider the Soft Disk. Since it can be run with Apple DOS and Apple Pascal, it is versatile. Besides, it's always convenient to have an extra disk drive, especially if the drive operates at high speed. That's exactly how the Soft Disk looks to the computer. Under DOS, up to four of these cards can be installed giving as many as four extra disks or 512K of storage. If installed in Slot 0, it's recognized as a regular 16K expansion for loading an alternate language or, with memory management software, for relocating DOS and expanding the programmable memory to as much as 176K.

Personally, I feel the inconveniences and delays in getting software to run on the Appli-Card are severe enough to jeopardize the utility of the product. I've curtailed my use of the card and limit it to work where speed is the principal consideration. For general CP/M use, I remove it from the system and substitute a slower CP/M co-processor, costing execution time but making it easier to get new programs operational.

If one can get past the difficulties of acquiring, programming, or installing new drivers for individual pieces of software, the Appli-Card is worthwhile. Its software includes such things as "soft video" for 70-column graphic text display without added hardware, horizontal screen scrolling in 40-column display mode, 80-column display with appropriate hardware, and a utility to convert files in either direction between DOS 3.3 and CP/M.

The new generation of Appli-Cards also provides plug-in 64K or 128K "RAM extenders." Though I've not tried them, they are supposed to provide a 128K or 192K RAM disk for Apple DOS and a 64K or 128K RAM disk for CP/M when used with PCPI's Appli-Disc software.

Users who can dedicate their systems to a few proven and regularly used applications can expect the best performance from the Appli-Card. Those who intend to jump frequently from application to application and are expecting a "plug it in and go" operation would be wise to examine the Appli-Card carefully before committing their systems to it.

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CP/M is a trademark of Digital Research Corp.
Soft Disk is a trademark of Legend Industries Ltd.
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ELITE HEADSET

ACS Communications Inc.
250 Technology Circle
Scotts Valley, CA 95066-3575
(408) 438-3883 or (800) 538-0742
List Price: $59.95

Reviewed by Ernest E. Mau

Ever gotten a stiff neck working at the computer while talking on a phone jammed between your shoulder and ear? ACS Communications' *Elite* telephone headset could be what you need. The lightweight unit slips over your head, providing a comfortable earpiece and a high-quality microphone. Your hands are free, and you can continue working without discomfort.

Installation is simple. Just disconnect the modular plug from a telephone receiver and reconnect it to the volume-control box of the *Elite* headset.

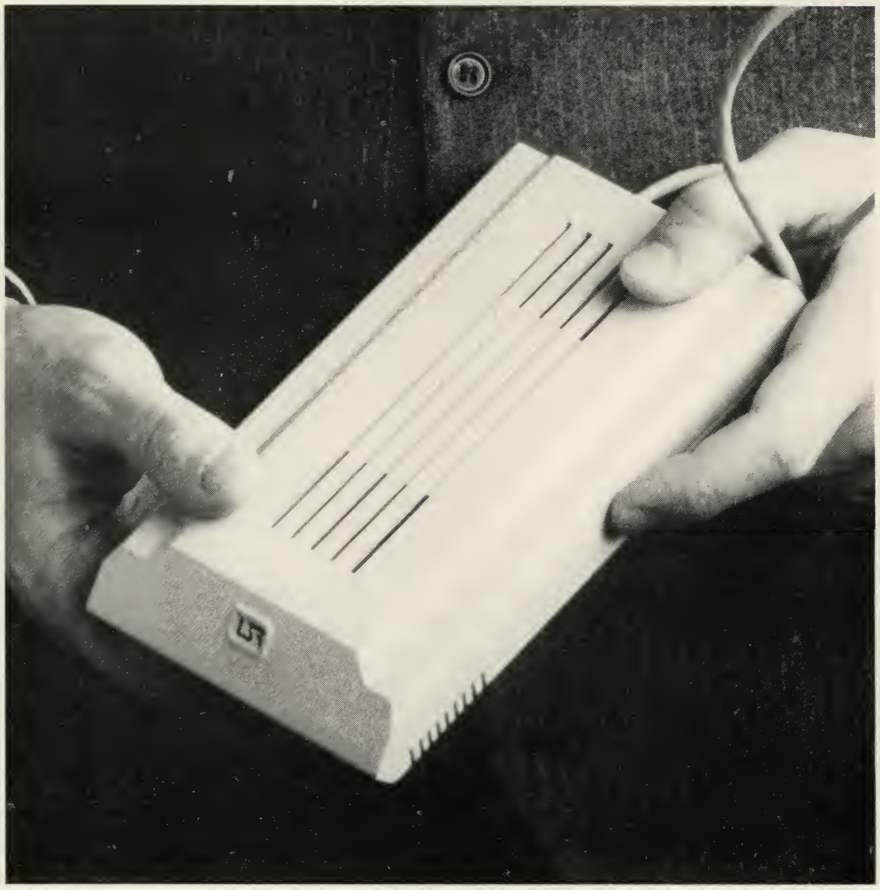
Sound quality is excellent. The microphone gives no significant loss of voice recognition or understanding, and it seems as good as a conventional telephone. Positioned directly in front of my mouth, there was some interference from breathing across the microphone, but pivoting it under my chin eliminated that problem yet gave continued good voice transmission.

The earpiece did slip around, interfering with hearing. Bending the head wire as instructed helped, but wasn't enough. Since most slippage was caused by the weight of the cord and the angle at which it enters the earpiece, moving the cord clip near the earpiece and attaching it to a shirt collar reduced the drag and minimized difficulties. While a lighter or more flexible cord might have been an advantage, *Elite* is usable and acceptably comfortable as designed.

THE USR PASSWORD MODEM

U.S. Robotics Inc.
1123 West Washington Blvd.
Chicago, IL 60607
(312) 733-0497
List Price: $449

Reviewed by Steven K. Roberts and James A. Dudick



While the conventional wisdom in the personal data communications business has for years favored 1200 baud over 300, the prices of ready-to-run high-speed modems have discriminated against those on a budget. Plodding along at 30 characters per second, vowing to give up beer and cigarettes for a month if need be, thousands of network users have watched text ooze by on the screen and dreamt of 1200 baud.

A new modem from U.S. Robotics will soften the financial impact of the conversion to wider information bandwidth without forcing any compromises in performance. Called the "Password," this lightweight, elegant unit lists for $449. We have integrated one into BEHEMOTH, the Micromax 1000 system owned by bicycle nomad Roberts, and the implementation was almost shockingly swift and painless.

The Password is a free-standing "smart" modem that operates at either 1200 or 100 to 300 baud. It is compatible with the reigning standards at those two rates, namely Bell 212A and 103. It is interconnected with the host computer via an RS-232 serial data line, through which passes not only communications data but ASCII commands and status messages as well.

The elegance of a stand-alone modem is based on the fact that you don't need to perform any manual functions. Answering, dialing, changing baud rates, and the like are all under straightforward computer control, via command messages of up to 60 characters in length. The Password can be instructed to behave in a way appropriate to your application, with programmable selection of full- or half-duplex, speaker mode, type of dialing (pulse or tone), number of rings to delay before answering, length of time to wait for a carrier before giving up, and all the control parameters governing its interactive communication with the host. There are no status indicators on the unit — just a power LED — and only four DIP switches for rarely-changed parameters.

As deregulation causes the telephone system to become ever more complex with the advent of private-label PABX's and long-distance services such as MCI, the mechanics of dialing have become anything but standard. It may be necessary to dial as many as 28 digits to establish a connection (an "outside line" digit, 7-digit local Sprint access number, 6-digit account code, 2-digit individual account, 10-digit phone number, and 2-digit travel code). The Password can handle all this, including the requisite delays between number segments. It can also, cleverly, deliver a combination of pulse and tone dialing within the same number for those very real and maddening situations wherein a private long-distance service must be accessed from a house with only a dial-type phone.

Any machine that can handle multiple baud rates raises the specter of ending up in the wrong one half the time. But the designers obviously gave this matter careful consideration, for the modem automatically matches its speed to that of the system issuing it a command. When it takes an incoming call, it informs its local host of the rate via both a signal on the connector and — for pure-ASCII installations — with the words "CONNECT" or "CONNECT 1200" as appropriate.

The Password is equipped with an internal speaker that enables the user to listen to the connection process until the establishment of carrier (a useful and addicting feature). It has two other modes — permanently off and permanently on. This should satisfy the requirements of any application.

Early implementation of the Password on our system was performed with some very straightforward home-written software. We are now bringing up a compatible version of the excellent public-domain communications program MODEM7, and, given the cost/performance ratio of this unit, it's a good bet that commercial packages are already available.

CROSSTALK XVI

Microstuf Inc.
1845 The Exchange, Suite 140
Atlanta, GA 30039
(404) 952-0267
List Price: $195

Reviewed by Mark Bernstein

Microstuf's CROSSTALK XVI provides sophisticated telecommunications features for demanding computer users. CROSSTALK supports a host of exciting features, including a much-needed terminal emulator that configures the IBM PC to behave like many of the most popular mainframe terminals.

CROSSTALK XVI runs on IBM PCs and XTs equipped with at least 96K memory and is compatible with most PC look-alikes, including the Compaq, Victor 9000, and Eagle 1600 computers. It is compatible with most modems, although automatic dialing is restricted to the modems listed at the end of this review.

Some people think all menu-driven systems are "user-friendly", but experienced users often find menus aggravating, awkward and slow. Instead of deluging the advanced user with unwanted menus, Microstuf designed CROSSTALK XVI to use a wide assortment of commands that can be used individually or bundled into "script files" for much used tasks. Excellent screen design and abundant help files combined with a thorough (if sometimes disorganized) manual make CROSSTALK XVI easy to use for a novice as well. Still, it is clear that CROSSTALK XVI is especially suited for advanced users.

The script files are unusually powerful, permitting you to customize CROSSTALK XVI for each system you use. You can assign function keys to send messages to the remote system and commands to CROSSTALK. For example, a single keystroke can tell CROSSTALK to set the screen color to green, log on to CompuServe, capture EMAIL to disk, and then sign off. You can even tell CROSSTALK to make long-distance calls late at night while you sleep!

One of CROSSTALK XVI's most interesting features is its ability to emulate the behavior of common mainframe terminals, including the DEC VT-100, TeleVideo 950, and IBM 3101. This feature is vital for programmers who use their PCs to develop software on mainframe computers. It is also attractive to hobbyists who can use this feature to play high-performance video games, including CompuServe's newest game feature, MegaWars II.

CROSSTALK XVI handles all the tasks that microcomputer users have come to expect from first-rate telecommunications software and which many of their mainframe-using colleagues still envy. You can program each function key to transmit any set of commands. Longer or more complex operations can be automated by loading "script files": Batches of commands which CROSSTALK XVI performs automatically. Script files can even carry out dialogues with the operator. Indeed, MicroStuf provides a tutorial script file for new users that walks them through an entire telephone session, step by step, from setting the telephone number to hanging up the phone.

A rich command vocabulary may confuse or intimidate new users, but it provides capabilities that other programs cannot often match. Most other programs only give you one way to end a session, but CROSSTALK XVI lets you choose precisely what you want to do:

- Leave CROSSTALK XVI and hang up the phone
- Leave CROSSTALK XVI, but don't end the call (useful if you need to switch over to another program)
- Hang up the phone, but don't leave CROSSTALK (useful if you need to call another system right away)

You can show or ignore control characters at will, capture data to memory or to disk, save "snapshots" of the screen, or even review information you received earlier in the session. If you haven't been storing a transcript of your session on disk and suddenly change your mind, all is not lost: CROSSTALK XVI's unique "retro-capture" facility lets you capture and save information even after it scrolls off your screen. You can transmit files from your computer to almost any remote system, or you can turn your computer into a simple bulletin board system and permit outside callers to call your system and download selected files.

CROSSTALK XVI, for $195, is supplied on a single copyable disk under a single-user, single-system license. Novices and those who use their modems to access information utilities and databases rather than to write programs or edit remote data files may find D.C. Hayes' Smartcom II (reviewed in the November issue) easier and more convenient to use. Still, for writing programs or sending electronic mail, CROSSTALK XVI is unsurpassed.

Modems for use with CROSSTALK XVI: Hayes Smartmodem, Hayes Smartmodem 1200, U.S. Robotics Auto-Dial 212A, Novation Smart-Cat, Bizcomp 1012, SSM Transmodem.

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DATA ACE
Database Management System for the IBM PC

Computer Software Design
1911 Wright Circle
Anaheim, CA 92806
List Price: $645

Reviewed by William J. Lynott

When it comes to Data Ace, there's good news and bad news. Let's cover the bad news first.

In mainframe computer systems, documentation of software falls into fairly standardized channels. Since everyone involved in mainframe hardware and applications is a computer professional, documentation is hardly more than one technical type talking to another. Not so in the world of personal computing.

Since many users of micro systems are business persons not yet comfortable in the world of bytes and bits, user-friendly documentation is essential to successful implementation of the programs they buy. The documentation for Data Ace reflects an obvious effort by the authors to make their instructions clear to the non-technical user, but it falls short of that goal.

While it is enclosed in a high quality loose-leaf binder with handy pockets front and rear, the high marks end there. The organization and sequence could have been better thought out, and the pages are reproductions of typewriter-written copy. There is a grammatical error on the very first page.

Data Ace deserves better — it's a fine program. Fortunately, the good news is very good.

Many programs on the market today attempt to pass themselves off as database management systems when they are, in fact, little more than simple file management programs. Data Ace is a true relational database manager with interactive data definition facilities and a memory-resident data dictionary. It also incorporates a data manipulation language (DML) that may be used to compile or interpret programs. Written in FORTH, it boasts flexibility, power, and speed not possible in BASIC programs. Remarkably, all of this is crammed onto a single double-sided program disk. Thus, one of the major annoyances of the better database systems — constant disk swapping — is eliminated entirely.

One of the most valuable facilities of a relational database manager, the ability to compare or merge data from different files, is illustrated clearly on the demonstration data disk that accompanies Data Ace. A file listing inventory, for example, can be interfaced with a file listing all vendors and suppliers. Thus, the report generator can make use of both Boolean logic and relational operators to produce data such as which vendors are supplying the fastest moving items; which are the fastest or slowest in shipping; which are offering lower costs, etc. Once a database has been constructed with Data Ace, the program has the ability to extract information in almost any form. The search functions work with eye-blinking speed and, because the program uses notationals, painfully slow sorting procedures are unnecessary. A printer may be switched online or offline easily at any point.

But, as they say, there's no such thing as a free lunch. At $645, Data Ace will be beyond the financial reach of many potential users. And the hardware requirements must be noted with care. The IBM PC version requires at least 128K of memory and two double-sided disk drives.

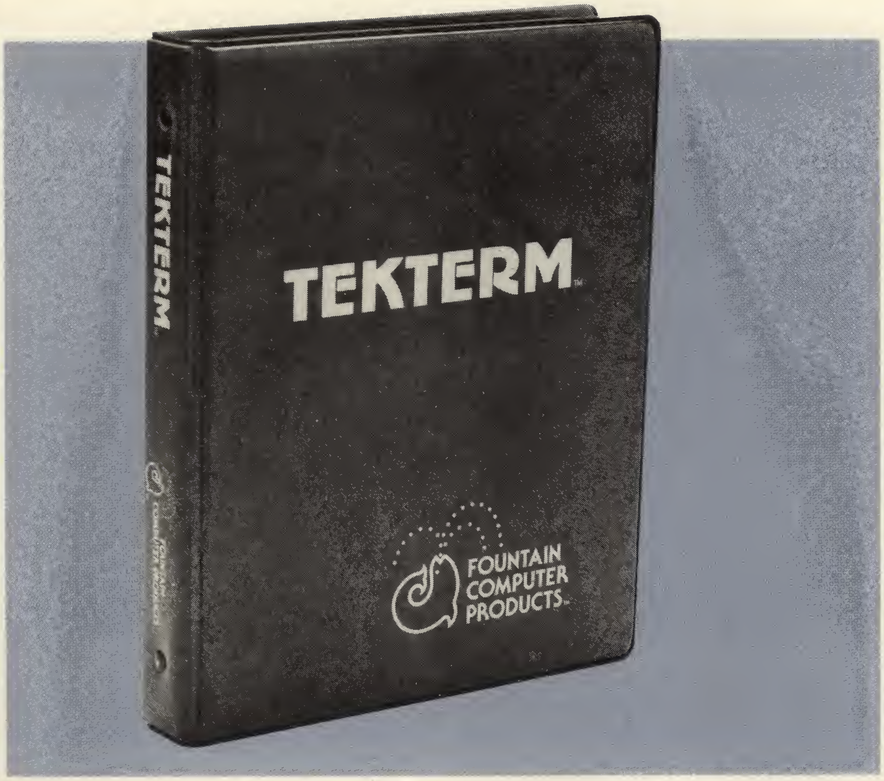
Once a database has been constructed, it is remarkably easy to maintain. In Data Ace's command mode, which is called DIL for Data Interrogation Language, the syntax and assortment of commands are so simple that they can literally be learned in a matter of minutes. The four basic commands are ADD, CHANGE, DELETE, and LIST. All of which work smoothly and quickly. The search function is faster than any I have seen in a micro program, and there are a number of built-in safeguards against troublesome input errors.

However, initial defining and construction of a new database is somewhat ponderous, requiring close study of the instructions and the learning of a number of terms likely to be unfamiliar to the typical micro user (the use of "relationals" instead of "files," for example). It is in the instructions for defining the relations, layouts, and fields for the construction of a new database that the authors slip into the jargon that may confuse some users.

One of the problems facing anyone attempting to write programs for the burgeoning microcomputer market is the diversity of the potential audience. Attempting to write a single program that will satisfy everyone from rank beginner to seasoned computerist is a sin committed by too many software writers. The authors of Data Ace have clearly avoided this pitfall.

Data Ace is a serious package that provides enough flexibility and power to satisfy most database needs that can be served with a microcomputer. However, it is not a program suited for beginners. A basic familiarity with programming techniques and some practical experience with some form of database will allow the user to appreciate the valuable features of this database management system.

"DATA!! DATA!!"



TEKTERM
Intelligent Terminal Communications Software

Fountain Computer Products
1901 Kipling, Lakewood, CO 80215
(303) 232-8346
List Price: $90
Apple II+, IIe, and III in emulation mode.

Reviewed by Alex Krislov

Software for the Apple computer inevitably falls into one of two categories: either it is intended for the "basic" Apple's 40-column limitations, or it assumes the owner has purchased an 80-column card. In the last few years, a number of products have appeared that attempt to bridge the gap through software-generated lower-case characters and wider lines.

TEKTERM joins the growing list of software-generated "expanded Apple" products with a unique advantage. By using the Apple's 40-column graphics mode in conjunction with a 70-column screen, TEKTERM allows telephone transmission of graphics loaded files. In other words, you can transmit pictures over your phone lines.

Simulating the Tektronix 4010 format on Apple's high-resolution screen, TEKTERM effectively creates a limited Tektronix terminal out of your Apple computer. TEKTERM is compatible with any 4010 compatible software, but it does have limitations that a true Tektronix terminal would not. Resolution drops from 1024 by 1024 to 192 by 280. Tektronix's second display margin is unavailable. These are small difficulties compared to the advantages inherent in the program.

The TEKTERM screen, with 780 vertical and 1,024 horizontal points, is capable of greater resolution than the Apple, so everything is scaled down to fit. Drawing graphics is relatively easy. The first command sets a "dark vector" or starting point. From there, each command draws a line from the current point to the next coordinate. This is considerably simpler than the common graphics requirement that demands two sets of coordinates for each line. Naturally, a new starting point may be defined at any time, allowing a number of separate lines in one picture.

KNOW YOUR CLIENT
For the IBM PC

Execuware Div. of Aeronca Inc.
7415 Pineville-Matthews Rd.
Suite 300 Box 10
Charlotte, NC 28211
List Price: $92.95

Reviewed by William J. Lynott

Know Your Client is a good example of a program designed to perform a single function. More elaborate database programs often take on an unwieldy character in the author's attempt to build in enough flexibility to generate broad market appeal. *KYC* has no such problem, nor does it offer much in the way of flexibility.

Any user with a specific need to keep tabs on a list of clients, prospects, contacts, etc., will find *Know Your Client* able to serve the purpose well. The record format is fixed, but contains space for just about any information that might be needed for such a project.

In addition to the standard name-address, and other data normally maintained in a client file, *KYC* has such trimmings as a "common factors" entry. This permits designation of up to 12 factors that may be common to a portion of the names in the file. Age, hobbies, income bracket, college affiliation, or any of an almost unlimited set of parameters may be used to print out groups of names with common ties.

The format also includes space for home and business address, secretary's name, last contact date, follow-up date, and a three-line allocation for notes. According to the documentation, a one-sided disk will hold about 200 records.

The single-disk program runs smoothly and it allows searches for all or any of the primary entries including name, company, zip code, and common factors.

The print choice on the main menu allows the printing of a partial or complete report of all records in the file or a fixed-format mailing label. The documentation is brief, clearly written and nicely presented.

All-in-all a nice package for the user whose needs parallel the design of the program.

IBM USER'S GUIDES

User's Guide With Applications for the IBM Personal Computer
288 pages, $17.95
Techniques of Basic for the IBM Personal Computer
258 pages, $18.95
Data and File Management for the IBM Personal Computer
191 pages, $16.95
Introduction to Graphics for the IBM Personal Computer
165 pages, $15.95
by John P. Grillo and J.D. Robertson
William C. Brown, Publishers

Reviewed by William J. Lynott

The rush to satisfy today's insatiable demand for computer books seems to have uncovered a goodly supply of authors who fall into one of two categories: the barely knowledgeable amateur who rushes into print after a few months of superficial experience, and the professorial genius with an awesome knowledge of the subject and a total inability to communicate in language that can be understood by ordinary mortals.

What a pleasure to discover an author — actually two — who breaks that mold. Grillo and Robertson are both professors of computer sciences, steeped in credentials, and pleasantly capable of composing sentences in plain English.

This is not to say that they do not occasionally lapse into a convoluted passage or two, but given the range and depth of the subjects covered in this series of four books, they do remarkably well in keeping their explanations readable. Each of the four books, while related to the others in a sequential sense, can stand alone as a separate work. The potential buyer of any of them, though, should bear in mind that they are not aimed at the rank beginner. The authors have assumed at least a basic knowledge of computer fundamentals and programming in BASIC on the part of the reader. Their efforts are obviously intended for readers willing to invest more than a little time and effort to learn how to program and use the IBM Personal Computer with maximum efficiency.

User's Guide With Applications for the IBM Personal Computer is the most basic of the series. Beginning with a detailed explanation of how hand-held calculators do their work, the authors proceed to illustrate the hazy line that separates advanced calculators and basic computers. This approach leads the reader naturally into a well-ordered discussion of computer hardware and software and the relationship between the two.

Hardware architecture is dealt with at some length. The central processing unit (CPU) is shown to be made up of three distinct parts: the memory unit, the arithmetic logic unit (ALU), and the control unit (CU). There is an overview of peripheral hardware, including printers, and a particularly informative treatment of floppy disks and disk drives. Some handy techniques of preventive maintenance are included.

The balance of the text is devoted to fundamentals of programming with explanations of file management and applications software. Also included are several tested and ready-to-run programs in BASIC for the IBM PC, including a simple but interesting mailing list program suitable for home use.

As with the other volumes, an optional disk containing all of the programs in the book is available from the publisher for $39.95.

Techniques of Basic for the IBM Personal Computer is a follow-up to the relatively simple programming exercises contained in the companion volume discussed above. Starting right off with the IF-THEN-ELSE structure, it deals at length with relatively advanced BASIC programming techniques. Such concepts as decisions and branching, statements and functions, variables and graphics, are all treated separately in chapters of their own.

A chapter on file manipulation techniques is especially informative. It offers insights that should prove helpful to users of commercial software as well as do-it-yourself programs. Beginning with file-building subroutines and direct-access files, the chapter moves smoothly into deleting and sorting, topics that prove difficult to many beginning programmers.

As is the case with all four books in this series, all programs are written in Microsoft BASIC, and each has been tested on the IBM PC. In all, the book contains 75 simple programs and subroutines ranging from inventory control to demonstrations of sorting routines.

The authors take pains to caution that the book presupposes a knowledge of simple BASIC techniques, such as loops, and simple string and numeric variables. If you have not dabbled a bit in BASIC, this book will be too advanced for you. Either the *User's Guide* reviewed above or some other introduction to BASIC should be tackled first.

After a couple of semesters of programming training, most colleges introduce the student to a course called Data Structures. *Data and File Management for the IBM Personal Computer*, the third book in this series, is devoted largely to this general subject.

This volume introduces the reader to truly advanced BASIC programming techniques. The proper use of algorithms and how they can help to minimize the time required for sorting and searching is treated at some length. The reader is guided through techniques designed to make BASIC programs as efficient and practical as possible.

Some 48 diverse and relatively elaborate programs and routines for common applications are scattered throughout the book. As the authors point out, the optional disk offers a way to save the tedium and potential for error involved in keying in the programs. At $39.95, though, I would imagine that many potential readers would prefer to have a go at it themselves.

In a fitting finale to the series, *Introduction to Graphics for the IBM Personal Computer* examines two of the three general methods for creating computer graphics using BASIC language. The bulk of the book, by far, is taken up with line printer graphics, the simplest of the low resolution methods. This method, while relatively crude, offers a logical entry into the fascinating challenge of creating original computer graphics.

Also included are programs and techniques for creating so-called character graphics. Character graphics offer the student a richer variety than those possible with simple line printer graphics. Everything from stick figures to schematics and blueprints are included in the 38 programs listed in the book.

Pixels, the third method of creating graphics, is not discussed.

All together, this four-volume series constitutes one of the most thorough texts on BASIC programming that I have seen. The cost, though, is stiff at $69.80 for the four, and this is exclusive of the optional disks.

MAKING MONEY WITH YOUR MICROCOMPUTER

by Robert J. Traister and Rich Ingram
Tab Books Inc., 1983
152 pages; $7.95

Reviewed by Ernest E. Mau

Here's another in a seemingly endless stream of "how to make money" books. You've seen them before — books relying on dreams of easy money to reap profits for the people who put out the books. At least this volume has two points in its favor. First, it's no worse than others of its kind. Second, the price isn't likely to break anyone's budget.

Although well written and quite readable as far as it goes, the book is shallow and superficial. It presents ideas, claimed to be proven income-earning methods, but it dances lightly over the subjects with little attention to problems that may be encountered. It promises practical advice on how to start a business and how to set up an office at home, but it fails to address the many difficulties a newcomer must overcome.

On the brighter side, the book does contain 33 specific ideas for using a computer. Whether those ideas are practical depends on the reader, the reader's background and experience, and other variables such as the specific locale, the type of equipment used, and the reader's ingenuity.

Some credit is due. The authors do point out that their ideas are suitable for part-time supplemental income, not specifically for full-time pursuits. With imagination and luck, a reader might be able to earn enough to offset the costs of equipment and operating expenses, but there aren't any promises of getting rich quickly.

SMALLTALK-80:
The Language and Its Implementation

by Adele Goldberg and David Robson
Addison-Wesley, 1983
714 pages; $34.95

Reviewed by Mark Bernstein

SMALLTALK, a new and extremely influential computer language, is unusual (some say weird), but its underlying vision has inspired many exciting developments in personal computer software. Windows, the mouse, the icon, the integrated software environment — all these ideas were popularized by the SMALLTALK system.

Computer programs written in traditional languages like BASIC or Pascal are composed of long lists of instructions, recipes for actions that the machine ought to perform. Conventional languages encourage the programmer to think in terms of "flow-of-control" and "instruction sequence" and to build programs out of procedures and subroutines that call other procedures and subroutines.

SMALLTALK programmers, on the other hand, don't write procedures at all. Instead, they design objects, small hypothetical computers that communicate with each other by sending messages. In SMALLTALK, the programmer doesn't write a subroutine that clears the screen, rather a message is sent to the screen object that says "clear yourself."

This volume is the first generally available description of the full SMALLTALK system. The first two sections, which at 416 pages would make up a substantial volume by themselves, give a thorough overview of the language, including many detailed programming examples. Part Three develops several larger applications. Part Four, in turn, describes the implementation of SMALLTALK and includes a detailed specification for the entire system.

SMALLTALK is designed as an exemplary language for personal computers. It needs a lot of computer power, more than today's personal computers can provide, and so this excellent textbook won't appeal to those who want to learn a language that they can actually use. But for computerists who need to know how we'll use personal computers five or 10 years from now, *SMALLTALK-80* is a provocative and important vision that Goldberg and Robson describe in great detail.

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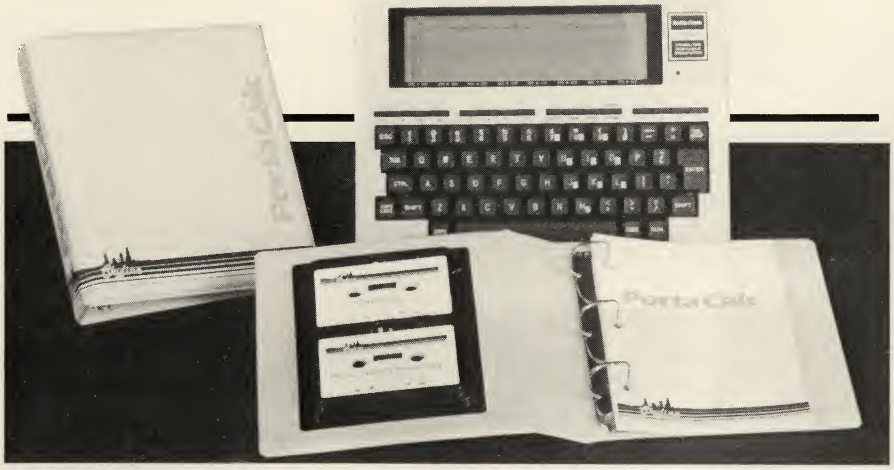

TRS-80, 100 PORTACALC SPREADSHEET

PortaCalc, an electronic spreadsheet program for the TRS-80 Model 100 computer, features a 14 column by 26 row workspace. Full use of the built-in function keys is made to save, load, screen print, report print or to look behind the data at the formulas in use.

PortaCalc worksheets may be saved, loaded or merged, using the computer's memory or cassette. Often used templates can be saved in memory for instant recall.

Two utility programs are also included. PortaPrint is an enhancement to the Model 100's text editor, adding the ability to adjust left, right and top margins as well as page length. PortaDex is a data exchange program that reformats PortaCalc files into the DIF format used by VisiCalc.

PortaCalc is supplied on tape and requires 24K RAM. For information, contact Skyline Marketing Corp., 4510 W. Irving Park Rd., Chicago, IL 60641. (312) 286-0762.

INTERNAL MODEM FOR IBM PC

Cermetek Microelectronics Inc. has introduced a Bell 212A-type modem called Info-Mate 212PC that plugs directly into the IBM PC, XT or IBM-compatible personal computers. It is supplied with a data communications software package called Modemate.

The software allows personal computer users to transmit and receive files, to auto-dial data or voice calls, receive or transmit information at full or half-duplex, log modem data on a printer and maintain a 60-entry "phone book."

Users are permitted to copy, modify or pass the communications package on to friends. The only copyright limits set by the manufacturer are that users may not copy Modemate for resale or use it with products other than the Info-Mate modem family.

The complete communications system sells for $495. For information, contact Cermetek Microelectronics Inc., 1308 Borregas Ave., P.O. Box 3565, Sunnyvale, CA 94089-3565. (408) 734-8150.

MICRO LINK II GOES TELEVIDEO

The Micro Link II, a popular communications and electronic mail program, now runs on the Televideo 800 series. With a telephone modem and Micro Link II, personal computer users can bring the world of information to their homes or offices. Information bases, such as CompuServe, are only a keystroke away.

The Micro Link II sends and receives any text, data or program file up to the capacity of the user's disk drive. Simple menu selections make even the very advanced features of this program easy to understand and use.

Several file-sending methods are available, including prompted line-by-line transmission and error-checked sector transfer.

Other versions of Micro Link II run on the IBM PC, Otrona attache and computers equipped with CP/M 2.2, MS-DOS or CP/M-86.

Suggested retail price is $99. For information, contact Digital Marketing, 2363 Boulevard Circle, Walnut Creek, CA 94595. (415) 947-1000.

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NOVATION COMMUNICATIONS SYSTEM

Novation Inc. has introduced a new smart modem, the PC1200B, and packaged it with the CROSSTALK XVI from Microstuf Inc. to create a complete communications system for the IBM PC, IBM XT, Columbia MPC, Columbia Portable, Corona PC, Corona Portable PC and Compaq.

The modem, software and documentation sell for $595, and is the first of a new family of customized communication systems called ACCESS 1-2-3 that will incorporate Novation's LSI 212 modem, CROSSTALK XVI software and all the accessories in packages specifically designed for personal computers.

Engineered to fit in a slot inside the computer, Novation's PC1200B is the company's newest smart modem using large scale integration (LSI) technology. The modem features an extensive set of commands and responses that provide telephone line status. It has a built-in dialer (TouchTone or rotary) with dial tone and busy detect, which allows the modem to be programmed to redial. It can also auto-answer and provide audio monitoring through the computer's internal speaker.

Capable of operating at either 300 or 1200 baud full duplex, the PC1200B can also perform an automatic self-test and receiver alignment at power on and can be put into analog or digital loopback test modes.

CROSSTALK XVI is an intelligent terminal and file transfer program.

For information, contact Novation Inc., 20409 Prairie St., Chatsworth, CA 91311. (213) 996-5060.

DATABASE MANAGEMENT SOFTWARE

Microrim Inc. has announced the R:base Series 4000 comprehensive database management software for the personal computer. Its advanced features boost the information management capacity of a microcomputer to the level of a mainframe.

R:base is a fully relational database management system. It has improved upon the industry standards in database management software by providing a range of convenient features, including relational data validation. This allows data entered to be checked for accuracy using selected values or data contained in other files.

R:base Series 4000 provides a direct interface to Multiplan and dBaseII and is compatible with Lotus 1-2-3, VisiCalc, WordStar and other software packages. It is priced at $495.

For information, contact Microrim Inc., 1750 112th Ave., N.E., Bellevue, WA 98004. (206) 453-6017.

COMPUTER-TYPEWRITER INTERFACE

A new era of expanded possibilities for both computers and word processors has been opened with the development of Supercord, an interface that links nine different brands of electronic typewriters with 20 different brands of computers.

Supercord allows such computers as the IBM PC, Apple, Atari 800, Commodore Pet 20 and 64, TRS-80, Osborne and Xerox to be connected to an electronic typewriter that serves the function of a printer. Typewriters that can be used include the Adler, Brother, Royal, Smith-Corona and Silver-Reed.

For information, contact Cord Ltd., 1548 Brookhollow Dr., Santa Ana, CA 92705. (714) 751-3587.

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PORTABLE MICRO DRIVE FOR TRS-80, 100

Holmes Engineering Inc. has introduced the PMD-100 Portable Micro Drive for the TRS-80 Model 100 portable computer. It allows the Model 100 to save and load programs and files at high speed using miniature continuous-loop tape cartridges.

The drive is a completely portable, battery-operated system that fits with the Model 100 into a standard briefcase. It is attached to the computer's RS-232C connector via a coiled "telephone" cord. The operating system is then downloaded to the Model 100 using the built-in Telcom software and resides in the computer's volatile memory for future use.

Operation of the drive is similar to operation of a floppy disk. Files may be saved or loaded and a directory of all files may be displayed on the computer's screen.

The PMD-100 retails for $349.95 and includes five wafer tapes, a battery charger, a connecting cable and complete operating instructions.

For information, contact Holmes Engineering Inc., 5175 Green Pine Dr., Murray, UT 84123. (801) 261-5652. 24-hour bulletin board system: (801) 263-1103.

HP MICRO OFFERED BY CONTROL DATA

Control Data Business Centers Inc. have announced the availability of the new Hewlett Packard 86B personal computer through its nationwide network of small business centers.

The new computer's basic configuration includes 128K of RAM, which is expandable to 640K, a 12-inch display monitor, dual 3½-inch disk drives, built in HP-IB interfaces, support for 10 local languages and an electronic disk ROM, which resembles RAM but acts as an extremely high-speed mass storage device. With the electronic disk, the 86B can transfer data 10 times faster than a floppy disk unit.

The HP 86B sells for $3,195. For information, contact Control Data Business Centers Inc., 500 W. Putnam Ave., Greenwich, CT 06836. (212) 490-9095.

COLOR COMPUTERS FROM RADIO SHACK

Radio Shack has introduced two new color computers, the TRS-80 16K Standard Color Computer 2 and the TRS-80 16K Extended Color Computer 2.

They are improved versions of Radio Shack's most popular family computers and come with a new compact white case, low-profile, electric typewriter-quality keyboard and prices that are less than last year's models. Both are ideal for video games, household, business and educational tasks.

The Standard Color Computer 2 sells for $239.95 and attaches to any television set. It comes with Standard Color BASIC language, including data and string handling, dimensioned arrays, math functions and nine digit numeric accuracy.

The Extended Color Computer 2 is offered for $319.95 and has all the capabilities of the Standard Color Computer 2. In addition, it has advanced programming capabilities, such as creation of high-resolution color graphics using simple one-line commands.

For information, contact Radio Shack, a division of Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102. (817) 390-3300.

QUAZON HOME VIDEOTEX TERMINAL

Quazon Corp. has introduced its first consumer product, a low-cost home videotex terminal called the Quik-Link 300.

Selling for under $250, the terminal comes complete with almost $200 in videotex service offerings from CompuServe, The Source, Dow Jones News/Retrieval and Comp-U-Store.

The Quik-Link 300 permits the user to gain access to four remote host processors or information systems simply by pressing a single function key. The terminal automatically dials into the network and logs on to a remote host, which can be anything from the user's business computer to one of the four information services offered with the Quik-Link 300.

The terminal is equipped with a touch-sensitive, alpha-numeric membrane keyboard and is operated by less than a dozen function keys. It requires no prior knowledge of computers or computer programming and features an integrated 300-baud modem, a 40-column by 24-row display and a full QUERTY keyboard. It is connected to the consumer's television set and modular telephone jack.

For information, contact Quazon Corp., 3330 Keller Springs Rd., Carrollton, TX 75006. (214) 385-9200.

FOUR HOUR ELECTRONIC MAIL SERVICE

State-of-the-art electronic mail technology has provided Purolator Courier and MCI with one of the fastest document delivery networks currently available.

MCI, a long distance telecommunications company, is offering an electronic mail service called "MCI Mail" that allows any office automation device or personal computer to transmit a message directly through MCI's nationwide network to 15 major markets in the United States. A hard copy of the document is then printed and delivered by Purolator to its destination in that market within four hours.

MCI Mail is currently available in Atlanta, Boston, Chicago, Cleveland, Detroit, Dallas, Houston, Los Angeles, New York, Minneapolis/St. Paul, Pittsburgh, Philadelphia, San Francisco, St. Louis and Washington, D.C.

Four hour service costs $25 and overnight service is $6. For information, contact Purolator Inc., 255 Old New Brunswick Rd., Piscataway, NJ 08854. (201) 885-1100.

VIDEOTEX: THE GREAT EQUALIZER

We are becoming a homogenized society.

"Mass" has become a most predictable modifier in our language. Mass media. Mass marketing. Mass appeal. Mass distribution. In fact, over the past 20 years, we've seen the idea of something being "locally produced" become rare.

Probably television is most responsible for making the country a smaller place. The cables that link us together have meant that we've all shared the heroes and villains of our day.

It's hard for us to imagine it any other way. Nonetheless, I think the national village created by the tube is being challenged from a most unlikely quarter — the personal computer.

To me, the brightest hope of videotex is its promise to restore the individual voices that have been filtered out in three decades of television. And how odd that will seem to those who still have a gut feeling that computers are somehow instruments of a sterile, brave, new world.

Television's effect on me, growing up as a boob tube kid in the 1950s, was personal — I lost my accent.

I was born on the side of Tyler Mountain in Kanawha County, W. Va. My father and mother, aunts and uncles, all had a rich, rough twang to their speech that was as much a part of the hills as the mountain laurel and silver maples.

However, today my friends tell me that, judging from the sound of my voice, I could have been born in California or Chicago or Cleveland. The lack of mountain in my voice, I think, is because I was reared by Walter Cronkite and Huntley and Brinkley. In my case, for some reason, the voices from the tube won out.

Whether that was good or bad is not the point. The fact is that my legacy from television, in taking Walter's voice and not my father's, was to lose a little something that made me a minority.

For others, the sifting effects of television have been far less sentimental. Blacks, orientals and other American minorities have complained that when they see themselves as television sees them, the picture is distorted. More often than not, they are portrayed only as they relate to the majority, they contend. Their uniqueness is rubbed away, like the rough edges on a stone to be polished.

Of course, I'm not suggesting there is any sinister plot at work in the networks. It's simply because television is one-way communication that gives us a synthesized view of America. Its users can't easily interact with the tube, so the people who run television have to anticipate what we want in news and entertainment.

It's sometimes a little depressing to see what they think we find amusing. And, after several decades now of listening and watching and keeping our mouths shut, some of us have begun to believe that the images on the screen are an accurate portrait of Americans. Subconciously, we rub away any rough edges in ourselves that don't seem to fit the shadows on the screen. We lose our accents, forget our regional heritage and folklore and give more consideration to the views and actions of people far away than we do those that originate in our hometowns.

Videotex may be the infant that grows up to challenge this, by giving us the opportunity to talk back to the nation.

As we've seen in the first few years of this exciting medium, videotex is sometimes a great equalizer. Through it, the voices from the Midwest and South can have as much influence and weight as those from New York and Washington. The young and old are afforded equal space. Even those whose ability to speak has been impaired can have an equal opportunity to speak here.

It's the kind of forum Thomas Jefferson would have liked — a clean slate on which anyone can write about any issue he wishes, without interruption or censorship, where unpopular opinions can be advanced without fear of reprisal. More importantly, in this place, in our best moments, we can talk to each other about the richness of our differences.

However, let's not fool ourselves into thinking that we've obtained a purer democracy through electronics — at least, not yet. We still have miles to go and some new kinds of problems to solve.

Some of the most serious challenges to videotex will come, I think, in how we deal with an over-abundance of riches. We may actually find ourselves asking if we have too much democracy.

For instance, the videotex community today is as homogenous as television's world. Our demographics lean toward the upper middle class. Among us, there aren't many ghetto kids, migrant farm workers, senior citizens on fixed incomes. It's expensive to be a pioneer here, and so far ours is still a narrow social strata, hardly a cross-section of the country.

It's improving. As the price of personal computers continues to drop, more people will find their way here.

That will make us better. Just as the immigration of different cultures has made America stronger, the infusion of different socio-economic groups will make videotex a more diverse and vital medium.

It also may cause some communications logjams and raise some questions about the nature and the value of our communications here.

•Will we be competing with each other just to be heard above the crowd?

•If we're all talking at once, is that communication, or just static?

•Beyond that, what will be the value of the words themselves, the actual messages, when "speaking to the nation" becomes commonplace?

Consider that before videotex, if you wanted to speak to the country — or the city, for that matter — you first needed to get an audience with a medium such as television, a newspaper or radio, or write a book. Getting a forum took effort and that effort made the experience rare and valuable.

With videotex, we all can make national pronouncements with little effort. If the communication is so easy, will we consider it worthless? Will the thought-provoking conversation here deteriorate to just so much barbershop banter?

Considering that the vitality of videotex depends on the words and thoughts we use here, that could amount to premature senility for this medium.

Oh, oh — what a scenario. Suddenly, our electronic hamlet is overrun by hoards of immigrants, all chattering at once, tying up our lines with their babble. There goes the neighborhood.

COMING IN THE JANUARY ISSUE OF TODAY

Welcome to 1984
Is the data network a realization of George Orwell's worst visions in his novel "1984?" Is videotex a forerunner of the two-way "telescreen" he described and the resulting videotex subculture with its own lingo the beginning of "Newspeak?" Was Orwell talking about 1984 at all? Find out next month as TODAY takes a look at the new year and all the issues the magical number "1984" raises in this "age of information."

Networking Without Wires
In an age of spiraling telephone costs, some networkers are finding ways to circumvent Ma Bell. The primary method is airwaves and TODAY contributor John Edwards tells all about radioteletype, on-air mailboxes and a new technology known as packet communication.

The High-Tech Paper Chase
TODAY columnist Charles Bowen wonders if business is being swallowed by paper despite all the hype about computers, networks and the "paperless society." Read all about it in next month's Online column.

Well, I think not. That chaos might await us, if our medium were like television, if our communications all funnelled into a single, common message.

But I think it will be a basic human drive that will make videotex grow stronger. Despite all our accommodations to the tube over the past three decades, I think we sense that there is something about it that goes against the grain. It is not natural for us to sit placidly and be talked to by a single voice.

When the waves of immigrants come to these shores, I think they will do what humans have always done when they come to a new land — explore. They will be driven to move away from the main and find or set up their own communities. Electronically, they will seek out nooks and crannies of the system for themselves.

It's already happening. CompuServe's special interest groups, I think, are a good example of what the immediate future of videotex will be like — villages on the larger electronic landscape. The members are bound by common interests and familiarity.

I can't help but think that videotex has a bright, healthy future because, away from the madding crowd, the true nature of this two-way medium is flourishing.

Those of us who have sat up until the wee hours of the morning talking to each other through our machines have already discovered the primary product of videotex. It's conversation — an art that was so threatened by the television we grew up with.

It's comfortable to me to know that there's something so old-fashioned about the brave, new worlds.

Charles Bowen's CompuServe User ID is 70007,411.

Adding Editing

Continued from page 30

worked word, a redundant expression, or some other flaw. If the suggested remedies are entered properly in the dictionary, the lack of information may not be too damaging, but it still would be nice to know. The only way around that is to include an identification of error type as part of the suggested remedy, but it consumes considerable disk and memory space.

Unlike *Grammatik*, this program can build a "suppress" file. That allows multiple proofreading passes of the same document without having to respond to the same errors that were ignored before.

The *Phrase* program also can be run with a special dictionary for the analysis of sentences written in passive voice. In some applications, using passive instead of active voice is undesirable, so this feature can go through a document to identify passive verbs and the associated prepositions. Such sentences then can be rewritten if necessary.

Typically, doing a complete punctuation and style check of a 30-page chapter takes about 15 minutes — running both the *Cleanup* and *Phrase* programs to mark the errors interactively. That's much faster than doing the same thing the old fashioned way with a paper printout and a pencil.

The *Punctuation & Style* package is available at $125 for most CP/M-based computers and those using derivatives of CP/M. Standard configuration files are provided for WordStar, Spellbinder, and Perfect Writer, while other word processors can be accommodated by writing a custom configuration.

Conclusion

These five programs show just some of the possibilities for enhancing the functions of a word processor. Each is a capable program in its own right and simplifies any serious writer's tasks. When I look back on the years of writing with a typewriter, followed by more years with just raw word processing, I wonder how I managed to get anything done. Now I accomplish in minutes what once took hours — in hours what once took days.

It seems obvious that anyone involved in any type of serious word processing should and could benefit from the advantages of an on-line thesaurus, a spelling proofreader, or a grammatical proofreader. The time saved more than pays the costs of the software. Perhaps the best way to prove it for yourself is to take a disk with your own document files to a dealership. After watching the regular sales demonstration, sit down at the machine and try programs of this type on your own work. Chances are you'll be as impressed as I was.

Suppliers:

Aspen Software Co., P.O. Box 339, Tijeras, NM 87059, (505) 281-1634.

Dictronics Publishing Inc., Customer Service, P.O. Box 367, Tijeras, NM 87059, (505) 281-5444. Corporate Offices: 362 Fifth Avenue, New York, NY 10001.

Oasis Systems, 2765 Reynard Way, San Diego, CA 92103, (619) 291-9489.

Ernest Mau is a contributing editor of TODAY.

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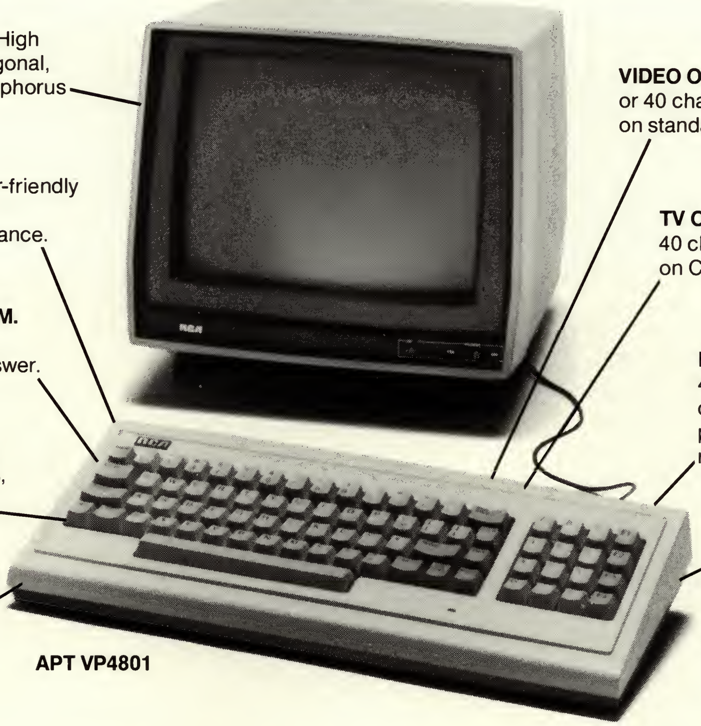

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APT VP4801

The new RCA APT (All Purpose Terminal) expands your data communications capabilities for a lot less money.

For business, professional and personal data communications, you'll find more user-friendly features and greater communications capabilities in the RCA APT than in other terminals selling for up to three times the price.

The new APT terminals are ideally suited to multi-data base time sharing and dedicated, direct computer-connected applications. They feature menu-controlled operation and a programmable "personality" to match specific communications requirements for your data bases.

A single keypress can dial a stored number, send the log-on sequence to the host computer, and return terminal control to the user. Password protection prevents unauthorized access to designated numbers. APT can also be used as an auto-dialer for voice communications.

Quite simply, matching features with price, there is no other professional quality terminal available today that can do as much at such low cost.

APT terminals list for $399, in your choice of full stroke or membrane keyboard versions. Either style is also available with a display monitor for $598 list. The data display monitor alone, VP3012D, $229 list.

For more information—or to order—call 800-RCA-0094. In Penna., call 800-RCA-0421. Or write for fully descriptive brochure to RCA MicroComputer Products, New Holland Avenue, Lancaster, PA 17604. OEM and dealer pricing available. The new RCA APT. Expansive. Not expensive.

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RS232C port for direct computer connections at data rates to 9600 baud, or for connecting high speed modems and other accessories. Parallel printer port for hard copy. Numeric keypad, can dial phone numbers not in terminal directory. Built-in speaker with adjustable volume control for audio monitoring of phone line. Smooth scroll display. Automatic screen blanking to reduce possibility of burn. Briefcase size: 17" x 7" x 2". Weight: under 4 lbs.

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COMPUTER OPERATORS.
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Actual unretouched photo.

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